

# Desert

SEPTEMBER, 1980 • \$1.50

**HAWAII'S  
TROPICAL DESERT**

**THE ST. HELENS'  
FALLOUT**

Disaster or  
Long-Term Boon?

**PAINTING  
DEATH VALLEY**







# RUGER



## *Over and Under Shotgun*

A new gun that carries on the Ruger tradition—an engineering philosophy which has produced over the years a line of fine sporting firearms, unique in their high quality and handsome design.

This first Ruger Over and Under Shotgun is a perfectly balanced, plain grade gun of elegant simplicity. By the Ruger definition, "plain grade" means precision workmanship and superior finish, with geometrically accurate curved shapes, plane surfaces which are finely polished and mechanical joints that are fitted to minimum hairline clearances.

The unique new mechanism with rebounding hammers and single selective trigger provides positive safety advantages. The gun opens easily and closes solidly. The distinctive styling and unusually low profile are accentuated by the fact that there are no visible pins or screws whatsoever. Barrels are hammer-forged, with 3" chambers and appropriate choke combinations, automatic ejectors and removable barrel side spacers. The barrels and dovetail hollow rib are permanently assembled with strong silver solder joints. The stock and forearm are fully seasoned straight grain American walnut, hand checkered and satin finished.

Every feature of the new gun reflects traditional Ruger attention to detail and the high quality which the American shooter has come to expect of all Ruger firearms. Initial production of the 20 gauge model will be



limited, with increasing numbers of guns becoming available in the months to come. Production of premium-grade 20 gauge models and the introduction of 12 gauge models is anticipated for the future. See your Ruger Dealer or write for complete details and specifications.



## STURM, RUGER & Company, Inc.

96 Lacey Place

Southport, Connecticut 06490 U.S.A.

ALL RUGER FIREARMS ARE DESIGNED AND MANUFACTURED IN RUGER FACTORIES IN THE UNITED STATES OF AMERICA





# CONTENTS

"Oh Lord, what a variety you have made! The earth is full of your riches." — *Psalms 104:24*

## Features

- 7 THE HOUSE OF  
THE SUN** by Janice Ott  
*Hawaii's Tropical Desert*

- 12 THE DISAPPEARING DUDE  
RANCH** by Miriam Feldman  
*Computerized Survivors of the Twenties*

- 15 A BIT OF DESERT  
HONEY** by Julia Crow  
*The Strange Lifestyle of the Wild Bee*

- 18 JUSTIFIABLE HOMICIDE,  
CALIFORNIA  
STYLE** by Ernie Maxwell  
*The True Story of Ramona*



- 22 SAND  
FOOD** by Wayne P. Armstrong  
*Vegetable of the Papagos*

- 24 RICHMOND,  
OREGON** by Emily J. Horswill  
*A Lively Ghost*

- 27 HOME ON THE NEVADA  
DESERT** by Don Miller  
*Where Men Once Hung Their Hats*



- 31 THE CACTUS CITY  
CLARION** Mary E. Twyman, Ed.  
*The Nosiest Newspaper in the West*

- 39 THE LAND OF WHITE  
SHADOWS** by Bruce B. Pierce  
*Painting Death Valley*

- 42 AFTER MOUNT  
ST. HELENS** by Nick Provenza  
*The Fallout — Disaster or Long-Term Boon?*



- 46 THIRST IN THE CHISOS  
MOUNTAINS** by Rita Tessmann  
*She Lived to Tell about It*

## Departments

LETTERS	5
EDITORIAL	6
PRODUCTS OF THE MONTH	21
DESERT ROCKHOUND	36
DESERT CALENDAR	37
THE LIVING DESERT	45
CHUCK WAGON COOKIN'	51
DESERT BOOK SHOP	52
TRADING POST	54

### Cover

Our cover shows a giant Saguaro cactus dramatically highlighted by a summer thunderstorm. Photo: Alpha Photo Associates



## The CAXTON PRINTERS, Ltd.

P.O. Box 700  
Caldwell, Idaho 83605

We take pride in the production of fine books for the readers of Western American history — with particular emphasis on the history of the Pacific Northwest and the Rocky Mountain region.

Write for a Free Catalog.

## MOVING?

SO YOU WILL NOT MISS AN ISSUE  
NOTIFY US SIX WEEKS IN ADVANCE  
BE SURE TO INCLUDE OLD  
ADDRESS AS WELL AS THE NEW  
AND BOTH ZIP CODES.



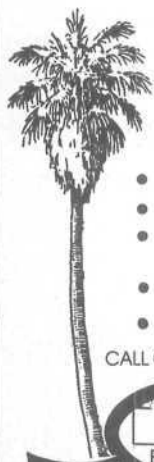
## CAL-GOLD

Metal Detectors, Geologists,  
Miners & Prospectors Supplies,  
Topo Maps, Books.

SEND FOR CATALOG:  
2400 E. Foothill Boulevard  
Pasadena, California 91107

In the Heart of Beautiful  
Coachella Valley

Plan To Stay At The  
Sands Hotel of Indian Wells  
(1/4 mile east of Palm Desert)



- Open Year-Round
- Children Welcome
- 48 rooms & suites (kitchens available)
- Complimentary Continental Breakfast
- Large Heated Pool
- Color Television
- Individual Air Conditioning
- AAA Approved
- Moderate Rates

CALL OR WRITE FOR RESERVATIONS

THE NEST  
RESTAURANT

**Sands**  
HOTEL

75-188 Highway 111,  
Indian Wells, Calif. 92260  
Phone (714) 346-8113

## Notice to subscribers

*Desert* Magazine rents its mailing list. This means that other organizations, both for profit and nonprofit, can send bulk mailings to our subscriber list in return for a fee. We limit the use of these names to organizations we believe to be reputable, and every mailing piece must be submitted to us for approval before it is sent.

If you would prefer not to receive mailings of this kind, write to Privacy, *Desert* Magazine, P.O. Box 1318, Palm Desert, California 92261. Please include a mailing label from a recent issue.

If you would like to have your name removed from as many mailing lists as possible, and not just *Desert* Magazine's, you should write to Mail Preference Service, 6 East 43rd Street, New York, N.Y. 10017. They will tell you how to have your name deleted from the lists used by most of the major mailers in the country.

# Desert

PUBLISHED MONTHLY SINCE 1937

### Editor

Donald MacDonald  
Art Director/Photo Editor

Thomas Threinen  
Production Director

Barry Berg  
Managing Editor

Mary E. Twyman

Ass't. Managing Editor

Pat J. Williams

Staff Photographer

Guy Motil

Art Associate

Jane Dival

### Contributing Editors

Karen Sausman, Natural Sciences

Wayne P. Armstrong, Natural Sciences

Jerry and Luisa Klink, Baja California

Merle H. Graffam, Cartographer

### Production Assistance

Jan Garland

Arlene Smith

### Special Services

Doug Bunting

### Publisher

Donald MacDonald

### Associate Publisher/Advertising Director

Daniel D. Whedon

Marketing Director

George E. Sector

### Subscription Fulfillment

Gloria Smith

### Business Manager

Marjorie Moline

### Counsel

Chester M. Ross

### Represented by

National Advertising Sales, Inc.

Robert E. Leyburn, Pres.

James R. Lytle, Gen'l Mgr.

750 Third Ave., 29th Floor

New York, NY 10017

(212) 682-7483

Robert L. Sarra, II, Reg. Mgr.

435 N. Michigan Ave., Suite 1314

Chicago, IL 60611

(312) 467-6240

Richard F. Landy, Reg. Mgr.

1680 Vine St., Suite 909

Los Angeles, CA 90028

(213) 466-7717

Lithographed in the U.S.A. by World Color Press •  
World distribution by Dell Distributing Co. Inc. •  
Offered in microfilm by Xerox University Micro-  
films • QUIP transmission available

**Desert Magazine** (USPS 535230) is published monthly by Cactus Paperworks, Inc., 74-425 Highway 111, P.O. Box 1318, Palm Desert, CA 92261. Telephone: (714) 568-2781. **Officers:** R. C. Packer, President; Chester M. Ross, Vice-President; Donald MacDonald, Vice-President; Marjorie Moline, Secretary. Controlled circulation postage paid at Sparta, Illinois and at additional mailing offices in the U.S.A. **Copyright 1980 by Desert Magazine.** All rights reserved. No part of this publication may be reproduced in any manner without written permission from the Publisher. **Subscription Rates for U.S. and its possessions, Canada and Mexico:** 1-year, \$10.00; 2-years, \$19.00. Elsewhere: Add \$4.00 per year (U.S. currency). **To Subscribe, Renew or Change Address:** Write Desert Magazine, P.O. Box 28816, San Diego, CA 92128. Please allow six weeks for processing and include where applicable the address label from the most recent copy of the Magazine. Exact zip codes are mandatory. Donors of gift subscriptions should include their own name and address as well as those of the recipient(s). **POSTMASTER: SEND CHANGE OF ADDRESS TO DESERT MAGAZINE, P.O. BOX 28816, SAN DIEGO, CA 92128.** **Contributions:** The Editor welcomes unsolicited manuscripts and photographs which will be returned **only** if accompanied by SASE, or envelope with international exchange coupons. While material will be treated with care while in our possession, we cannot assume responsibility for loss or damage. Payment is upon acceptance. Writers Guide free with SASE; sample copy, \$1.50.





# EDITORIAL

## Waste Not, Want Not

An ominous mailing from the U.S. Environmental Protection Agency, Office of Water and Hazardous Waste, in Arlington, Virginia, tells us we "had been identified as one which (*sic*) may possibly handle hazardous waste" and that said mailing was designed to assist us in determining whether we were affected by new hazardous waste regulations and, if so, to assist us in complying with the law.

Although the EPA admitted, after we had contacted them, that they were a little off target in thinking that magazines, new or used, were hazardous, it is true that publications of all kinds generate a lot of waste and that publishers are concerned by this. And, unfortunately, the higher the graphic standards of the publication, the less likely its chemically-coated paper content can be economically recycled. Common, garden-variety newsprint is the most valuable item on today's waste paper market.

The wasteful mailing was of indirect benefit, though, in that it prompted me research waste — the utterly astounding amount generated by civilized countries and the United States in particular.

My research tells me Americans consume over 4 billion tons of goods and materials each year. That's approximately 200 million truck-trailer loads or, if these goods were shipped by rail, the train hauling our annual needs would stretch nearly 75 times around the earth's circumference. And from those roundhouse figures one gains an idea of the litter created by just one civilized country and its peoples, for matter cannot be destroyed. It returns to whence it came, sooner or later, and mostly in unusable form. Even the cartons and crates used for shipping much of this stuff would fill a train almost as long if they were all returned for reuse.

The aluminum in empty cans, the rubber in old tires and the hydrocarbons in plastic bottles represent waste of increasingly scarce natural resources and there is a commonality of those twin national goals — conservation and cleanliness.

Common sense should tell us that if we stop manufacturing throwaway containers, then we will no longer have to pick them up and, in turn, we will save energy required for their manufacture. Recycling the raw materials from which the containers are made is but a partial solution, first because reprocessing consumes energy and secondly because human nature being what it is, only a fraction of these materials will be returned.

The rest is tossed, so perhaps we should go back to fetching our beer in a pail.

Unlikely, you say? Perhaps not. Let's imagine a day in Mother's life come the new age of waste-free distribution, just taking that ninety minutes or so she spends shopping for groceries. In her cupboard are rows of sturdy, clearly labeled containers of various, standardized capacities. She already has or there is available a suitable reusable container for every grocery item she could conceivably want that does not come prewrapped like a banana by nature. She takes these down to the new-age supermarket and has them refilled.

Some foods, of course, might never be adapted to the new system. But do we really need aerosol dessert topping, liquid cheese in tubes, biscuit dough in a cylinder, or lemon juice in a plastic lemon? TV dinners, if they're what's bothering you, could be packed with real tableware which could be either collected or returned. Imagine TV china as the successor to depression glass at the yard sales of the future!

Dispense with paper sacks. Sturdy, stylized shopping bags like Grandma used to use again and again would be one solution. And, too, I don't have a ready answer to compliance with truth-in-labeling laws under this new system, as there would be very few, if any, labels other than generic identification on the reusable containers. But then, there would be fewer cancer scares. Or, a reference book could be compiled if you insist on knowing that dried whey and disodium succinate are among the ingredients that help make Tuna Helper so tasty.

I anticipate resistance to this proposal. Maybe I should withdraw it in favor of another. I remember reading that paperwork generated by government costs industry \$116 billion annually. To put that sum in perspective, the combined net profits of all U.S. nonfinancial corporations in 1978, a very good year, was only \$61.5 billion.

So, let's just eliminate the paperwork, like the above-mentioned mailing from the Environmental Protection Agency. If any waste can be labeled "dangerous," if any single habit is more likely to defoliate our trees, it is the mind-boggling generation of forms by Washington which, in turn, generates more forms needed for reply.

*Don Mac Donald*



ALSO:  
 Restaurants\*\* Lounge \* Motel\*  
 Stores\*\* Available Slips\*  
 Mead and Mohave are large Colorado River lakes close to California, in the Southwest's highest sunshine belt. What an opportunity for one or two days of fun or a week of relaxation ... 800 miles of shoreline and 190,700 surface acres of warm, clear runoff water.  
 Toll-free reservations are as close as your phone;

**1-800-528-6154**

For a color rate brochure on all our facilities, including rental boats and RV hookups, mail coupon (check box if you would also like Lake Powell brochure).

\* **Callville Bay Resort & Marina**  
 22 miles east of Las Vegas  
 (702) 565-8958

\* **Cottonwood Cove Resort & Marina**  
 53 miles south of Boulder City  
 (702) 297-1464

Authorized by the National Park Service

Send color rate brochures on:  
☐ Mead/Mohave ☐ Powell

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Mail to:  
**Del Webb Recreational Properties**  
 Box 29040, Phoenix, AZ 85038





# LETTERS

## WANTS DESERT INDEXED

As a long-time subscriber I've often wanted to refer to an article I remember reading in the past but it would take looking through many issues to find it. So, please consider publishing an index each December for the year just past and perhaps a special five- or ten-year consolidated index for the longer term.

*Hugh R. Beyeler*

*El Monte, Calif.*

**We plan to index Vol. 43 of *Desert Magazine* in December and each December thereafter because we have received many similar requests.**

## VIVA COSTA RICA!

Since you published my letter extolling the advantages of living in Costa Rica and Colombia (*Desert*, March 1980) we've been deluged with mail from your readers. May I through your letters column assure them that we are delighted with their responses and will eventually answer each and every letter?

*Juanita Bird*

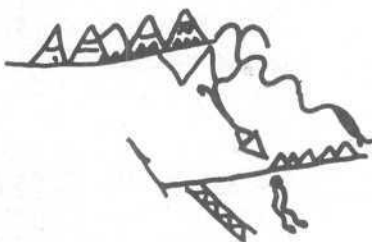
*Guanacaste, Costa Rica*

## PREHISTORIC PUBLICITY

I read with much interest Luisa Porter-Klink's article "The Cave Paintings of Baja" (*Desert*, April 1980). The petroglyphs on page 11 seem to be the work of an early chamber of commerce:



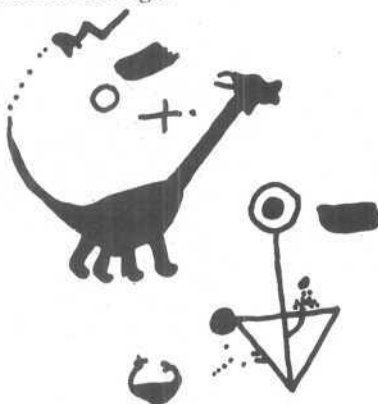
These drawings could mean "good cover, good cover for arriving people, good caves here by clean water."



The water comes from the snow-capped peaks. It comes down from or through the rocks in the foothills to the peaceful people by the clean water far from the mountains.

It would seem that the giants were fairly friendly! And now perhaps you can help me. I've lost a petroglyph and need to know its location. A photo of it was taken around 1920 and was in a collection

(Wetnerill family of the Four Corners area) given to the Arizona State Museum. The location of the petroglyph is purported to be near Winslow but no one in that area seems to have seen it. It was supposed to be located on the face of a boulder at Wildcat Hill, but the hill itself appears to be missing. The petroglyph has a rather distinctive design:



This sketch is in the lower left part of the petroglyph and comprises only a small section of a larger, very complicated design.

Any assistance you or your readers can provide will be greatly appreciated.

*Clifford C. Richey*

*Phoenix, Ariz.*

**Looks to us like the early chamber of commerce was at work here, too. The caption could read: "Girl-watching at our beaches could lead to permanent anchorage."**

## BLM, PRO AND CON

I read the article in my June issue of *Desert* with joy. It said what I've been trying to say for years; that there are 10-1/2 million acres of land in the California Desert and there is room for everyone. Most of us go to the desert to escape and to vent the pressures built up in each of us from either living or working, sometimes both, in and around our urban centers.

The Desert Plan is full of mistakes, half-truths and incorrect information that is presented as fact. The "No Action" alternative is the one to go with. I don't want to see more BLM rangers, signs and locked gates than we need to have.

*Anonymous*

*Victorville, Calif.*

I agree wholeheartedly with your July editorial. I'm a desert enthusiast, having lived in the Imperial Valley for sixteen years (1927 - 1943) and being a weekend commuter to the upper desert for the past thirty years.

A number of times in the past I've boiled over at some of the strictly conservationist-

environmentalist articles in *Desert Magazine* so I'm glad to see it is your policy to edit out the sometimes more than subtle trend to advocate restriction of entry into our desert to an elite few.

*C. P. Lunder*

*Orange, Calif.*

The increasingly brutal use of the California Desert by Southern Californians requires that efforts be made to protect it. Naturally, government regulation will grow and many activities now allowed will become illegal. This change is distasteful to me but it is a necessary evil to restrain the savages.

For about five years I have been camping in the Anza-Borrego desert at every opportunity. The only problem I have is with the 4WD'ers when I camp by the road. They come through at any hour of the night and drive right through my camp (which is always off the road), performing maneuvers that frighten my children and leave me apprehensive. Of approximately twelve encounters with the typical Southern California 4WD "desert lover," none has been characterized by politeness and consideration. I am not adverse to restricting the activities of such barbarians. We owe it to ourselves and to the desert itself.

*Wm. James Roberts*

*Pasadena, Calif.*

I certainly do hope *Desert Magazine* has not become a mouthpiece for a motorized desert!

*Phil H. Martin*

*Calimesa, Calif.*

I wish to give a resounding pat on the back for the excellent editorial in your July issue. As an off-road vehicle user I desire access to the desert. Without access the need to preserve it is dead.

*Eric J. Hodel*

*Lodi, Calif.*

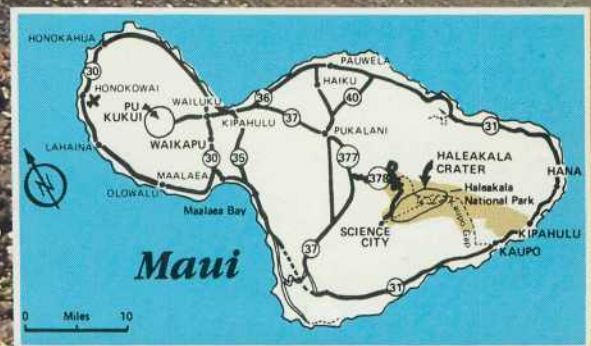
Granted, the BLM's plan is far from ideal, not totally clear and clean-cut, and will probably make all users of the California Desert area somewhat unhappy. But how are you going to protect the fragile natural resources of the desert without some controls and laws? If personally satisfying activities are not monitored for the long-range good of the total desert environment, the long-run total value of the California Desert will be no better than that of the Los Angeles Basin. The BLM Plan is not perfect but it is a positive starting point upon which hopefully intelligent and fore-sighted people can build.

*Jack Zaninovich*

*Delano, Calif.*



*This page: Haleakala's summit rises over 10,000 feet above sea level. Shown is a portion of the west slope, whose backside is a favorite playground for hanggliders. photo: Aaron Chang. Inset: A lone backpacker treks across the trail which traverses the crater. photo: Don King*





*Looking east from the west rim, across the cinder cones that texture the crater floor, affords a view of clouds creeping into Kaupo Gap. photo: Aaron Chang*

## *Hawaii's Tropical Desert*

# THE HOUSE OF THE SUN

*Maui, the demigod creator of islands, objected to the swiftness of the sun's journey across the sky, for there was never enough daylight for his people to complete their daily tasks, so he went to the great mountain which the sun passed over each day and, as the sun's rays crept over the mountain, Maui snared them and held them captive with his ropes. "Give me my life," pleaded the sun. "Only if you promise to go more slowly across the sky," replied Maui. And to this day, the sun moves very slowly across the heavens; and the great mountain is known as Haleakala, the House of the Sun. —>*

*by Janice Ott*





HE HOUSE OF THE SUN," translated from the Hawaiian name Haleakala (pronounced Holly-ah-ca-la), is a huge volcanic mountain that dominates the Hawaiian island of Maui and cradles one of the largest and most unique craters in the world.

So unusual is this crater that as early as 1919, the government recognized its value and included it in the Hawaii National Park system. In 1960, it obtained separate status to become Haleakala National Park.

Haleakala is not the typical palm trees and balmy beaches Hawaiians experience. Desert enthusiasts will feel an immediate affinity with the barren, eroded depression while less hardy folk who gaze at the vast panoramic moon scene from the rim's edge may be dismayed by the bleak desolation of the crater's interior.

Steeped in legend and myth, the great mountain's base rises from the blue Pacific waters to a majestic height of 10,000 feet. The interior bowl, formed by rain, wind, and stream erosion, drops nearly 3,000 feet where the elements have carved two long valleys that eventually merge in the mountain core. The slumbering volcano in later eruptions splattered the crater bottom with lava rock, cinders, ash and volcanic bombs.

Arrival at the 10,000 foot crater summit should be timed, if possible, to enjoy the spectacular view at sunrise or sunset from Pakaoao Hill. Mark Twain, in 1866, rode horseback to the tip of Haleakala and eulogized the colorful sunrise as "... the sublimist spectacle I have ever witnessed and I think the memory will remain with me always."

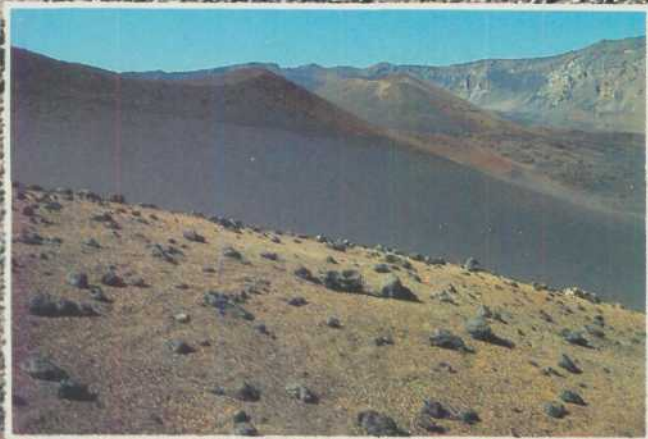
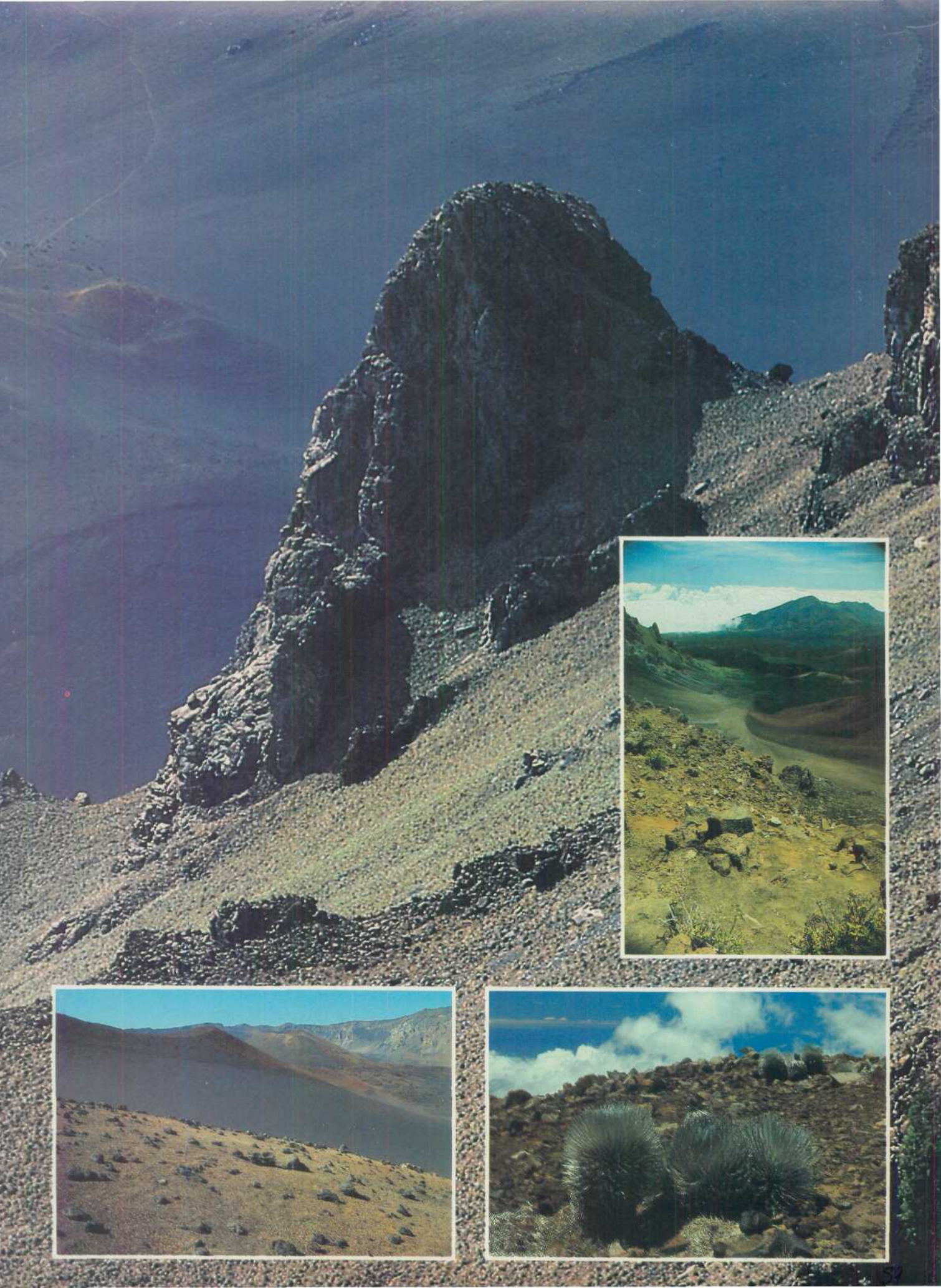
In clear weather, you can see more than 100 miles out to sea including the neighboring islands of Hawaii, Lanai, Molokai, and Oahu.

If you are fortunate, you might even experience the Specter of the Brocken — so named because the same phenomenon occurs on Mount Brocken in Germany. When the crater is cloudy and the sun low in the sky, your shadow may be projected on the clouds if your body is between the clouds and the sun. If enough mist is present in the air, the shadow image may be encircled by a rainbow, creating a halo effect.

From the rim, the 7-1/2 mile long and 2-1/2 mile wide valley interior seems incapable of supporting life. The only appearance of softness in the harsh environment is ➡

*Spread: A light carpet of tenacious vegetation adds a green hue to a west facing slope, some 2,000 feet above the crater floor. photo: Aaron Chang. Far right top: The northern half of Haleakala is quite dry and barren (foreground), in contrast to the southern area, which enjoys more exposure to moisture and rainfall (background). photo: Aaron Chang. Far right bottom: The hardy silver sword, indigenous to the Haleakala area only, they will occasionally sprout stalks up to six feet tall that blossom with purple and yellow flowers. photo: Aaron Chang. Near right: The crater floor is covered with coarse ash that, when disturbed, reveals a fine yellow dust underneath. photo: Don King*







the muted, vari-colored tones of the volcanic formations, mostly bleached blacks, greys, and subtle variations of pink and orange. Many of the thirty miles of trails traversing the crater are visible from this high vantage point, as little vegetation exists to limit the extended view.

Symmetrical cinder cones pimple the crater floor. The enormous burned-out vents, some over 600-feet high, created in the once powderful cauldron, are reminders that this is a dormant, not extinct, volcano whose latent energy may erupt again some day. Although the last volcanic outburst occurred in the late 18th Century, earthquake records testify that internal discord still festers in the deep depths of the earth's bowels. It is not difficult to imagine what an awesome sight the furnaces must have been in their original, fiery display.

In the distance, across the eerie cosmic terrain, Paliku is barely discernable; a contrasting patch of green against the watercolored pastel hues of the cinder cones — the delicate beauty enhanced by the silence that dominates the scene.

**I**F YOU WANT A closer look at the cone-studded cauldron, you will have to enter on foot or arrange for a horse, as no roads penetrate the crater, although you can see remnants of the ancient Hawaiian roadway that linked the eastern end of the island to the western end. It is several feet wide and paved with smooth, ocean-worn stones hauled from the beaches several thousand feet below. The old trail is sometimes referred to as the "Kings Highway."

Two main hiking trails lead into the basin. Halemauau at 8,000 feet and Sliding Sands at 9,800 feet. Both cross the crater and meet at Paliku. There are several short connecting routes along the way. It is customary to enter via Sliding Sands Trail (it is very steep), and to exit by Halemauau Trail or Kaupo Gap.

Good vibram-soled boots are recommended for all the trails consist either of loose cinders or hardened, fragmented lava stones whose sharp edges seem to penetrate even heavy soles.

The landscape is unreal as you descend; a lunar decor straight from a Hollywood science-fiction set. The weird, fantastic sight of cinder cones amidst surrealistic lava formations tantalizes the imagination and stirs the soul.

The crater bottom reveals evidences of life not visible from the rim. The most spectacular of the sparse, tenacious vegetation is the rare *abinabina* (gray-headed), silversword plant, easily identified by the silver spikes at its base. The spikes are covered with silky hair which enable the plant to retain moisture by reflecting the sun's rays.

To westerners, the silversword resembles the yucca plant but instead, belongs to the sunflower family. Sometime between its sixth to twentieth year, it

sprouts a large blossom with hundreds of purple flowers that soon wither and the parent silversword dies, leaving seeds to perpetuate the species. At one time, silverswords were endangered by unthinking humans and feral animals but they are making a comeback under the protection of the Park Service.

A short side-trip takes you to Bubble Cave, formed when a gas bubble supported the surrounding molten lava until it cooled and hardened. Entrance into the cave became possible when part of the roof collapsed. It is a unique place for a snack or rest break.

The first structure reached is Kapalaoa Cabin (5.8 miles from the trailhead), one of the three cabins within the crater that the

adaptation to a waterless habitat is the evolvement of less webbing between its toes. The goose is the Hawaiian State Bird and had to be reintroduced to the island in 1962 because of near extinction by predators, both human and animal. Some of the birds are friendly and may approach you.

To the south lies the usually cloud-engulfed Kaupo Gap. The prevailing tradewinds and rain have unevenly eroded the crater's slopes, producing a natural passageway out of the valley without the need for climbing. However, do not plan to use this exit unless you are in extremely good physical condition and have made arrangements for someone to meet you at Kaupo village, for hitch-hiking

---

## *The enormous burned-out vents, some over 600 feet high, are reminders that this is a dormant, not extinct, volcano.*

---

Park rents, for a nominal fee, to overnighters. The verdant lawn offers a respite from the heat, yet is incongruous with the environment. This distracts from the more delicate desert image and gives the suggestion of habitation, not the preferred mood of solitude.

If you have arranged, in advance, with the park service to stay in the cabin, you will have time to explore the slopes behind, where, on a high ledge, the remains of a *beiau*, a structure probably used for religious ceremonies by early Hawaiians, can be found along with other encampments.

Feral goats also frequent the slopes. Introduced to the island by Captain James Cook in the late 1700s, they are a menace to the rare indigenous flora within the crater but they are entertaining to watch.

If you are tenting for the night, it will be necessary to travel on to Paliku or Holua for no camping is allowed at Kapalaoa. Paliku is roughly ten miles from either trailhead so you are pushing it to make the hike in one day and still have enough energy and time for exploring.

**P**ALIKU (VERTICAL CLIFF) strikes the weary traveler as an oasis in the desert. Trees and lush vegetation testify to the frequent rainfall on this northeast corner of the crater. Clouds spilling over the rim from the windward slopes produce up to 250 inches of rain a year, creating a paradoxical garden within the otherwise sparsely furnished crater. Rain ponchos are almost always needed.

The area is populated with both indigenous and introduced foliage. Here, you want to watch for sight of the nene bird, a goose whose most obvious

opportunities are quite slim. Cars pass infrequently and usually are too small to carry extra people with backpacks.


Kaupo Gap trail is steep, a 6,000-foot descent in eight miles over rough terrain. Once you reach the dirt road near the beach (ten miles from Paliku), you still have many miles before you reach civilization.

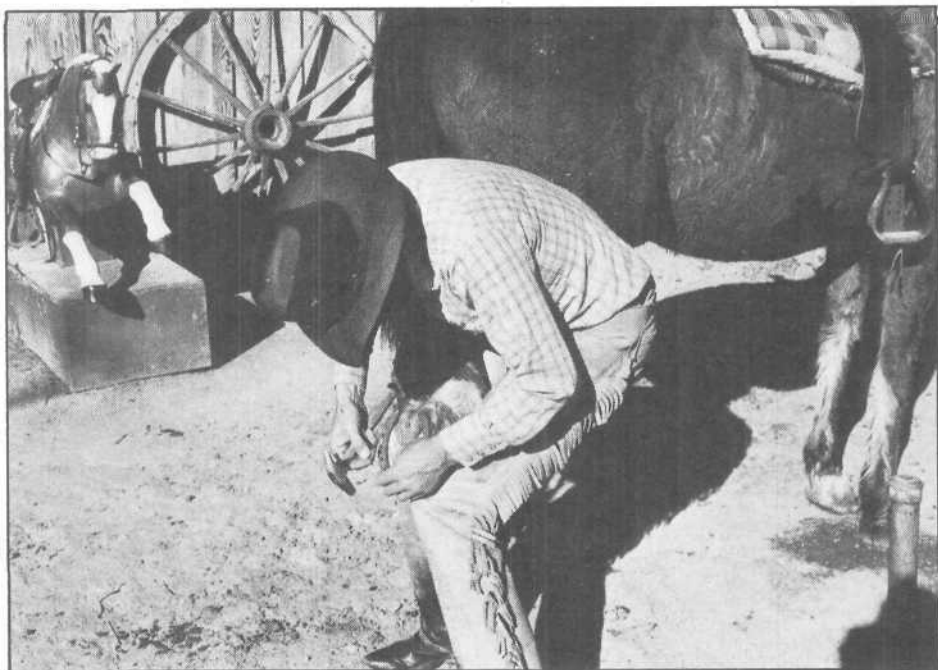
A side-trip from Paliku, if you aren't too tired or sore, is a climb up the non-maintained Lauulu trail (a zig-zag 2.3 miles), for excellent views of the crater and Hana coast. If you have not reserved the Paliku Cabin be sure to carry a tent with a good rain-fly and strong enough to withstand high winds.

The return trek from Paliku Cabin to Holua Cabin via the Halemauau Trail passes the Bottomless Pit, Haleakala's *sipapu* or navel. It is actually an old splatter vent, with a ten foot opening formed by extremely hot gases and lava blasted through from deep inside. Early Hawaiians believed it extended down to sea level. They deposited the umbilical cords of newborns into the pit to insure the child's health and honesty.

Not far from the pit is Pele's Paint Pot whose splashed bright colors delight the eye; an effect achieved from the presence of many different minerals in the magnum.

Holua is the last cabin on the circuitous route. There are several caves and lava tubes to explore in the vicinity if you have a flashlight handy. Archaeologists have discovered bodies of early Hawaiians buried in some of the caves.

The exit up Halemauau Trail is an easy 1,400 feet ascent in 3.9 miles on a series of switchbacks which leads you to the Park road. Magnificent views of the eastern portion of the crater will entertain your aesthetic senses on the upward trek. 

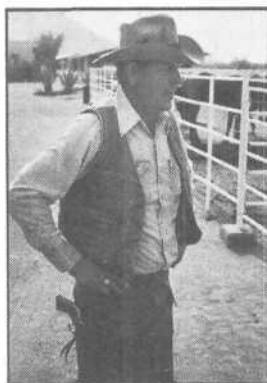


# *The Disappearing Dude Ranch*

**Photographs and Story By Miriam Feldman**

Overrun  
by  
urban  
sprawl

and the high  
cost of doing  
business,  
Arizona's guest  
ranches now  
number less  
than ten.



**Clyde  
Davis,  
head  
wrangler  
at  
White  
Stallion  
Ranch**

*One*

OF the toughest decisions Bob Cote has made as manager of the Tanque Verde Guest Ranch was to put his cowboys and wranglers on a time clock. "The concept is just not there for those people," Cote said. "What me, punch in a clock?" he said, recalling their

reaction to the change. "Hell, I'll just work all day long if I have to."

The federal government, however, is indifferent to the cowboys' complaints. They had a right to overtime pay, the government insisted, and although Cote paid his employees overtime before he had a time clock, he did not have an overtime formula, which the government also required. With fifty employees to supervise, time clocks were the only way Cote could keep his records straight and satisfy the government.

Although time clocks are now at home on the range, the Arizona ranch still offers a western experience to the traveler. Arizona conjures up images of the wild west, Cote said. Many of his guests travel there to "ride where the cowboys and Indians fought."

The wild west is disappearing though. Today, no ranches are left in smog-shrouded Phoenix. Sprawling development in Tucson has taken up land needed by ranches for horseback riding, so the number of ranches dwindles every year. "The dude ranch breed is dying out,"



said Patti Spaulding of the Tucson Convention and Visitors Bureau.

Less than ten ranches remain, and those that do, like Tanque Verde or Cynthia and Allen True's White Stallion, exist for a number of reasons, not the least of which is the determination and good business sense of the owners. Computers are used to analyze guest lists; e.g., 22 percent of Tanque Verde guests are from Illinois, and California sends more guests to White Stallion than any other state. Cote has hired German-speaking employees to help with the heavy influx of tourists from that nation each summer. True visited thirteen European countries in 45 days to meet with travel and airline agents to spread the word about White Stallion. The guest ranch is not a haphazard business.

**To**

GET to Tanque Verde Guest Ranch you travel down Speedway Boulevard, the longest street in Tucson. It runs the length of the city from the Tucson Mountains in the west to the Rincons in the east. Speedway is cluttered with Golden Arches, Taco Bells, shopping centers and traffic. In his TV series on America, Alistair Cooke once referred to Speedway as the ugliest street in America. A Tucsonian, who thought he knew better, disputed Cooke. Speedway isn't even the ugliest street in Tucson, he said.

Heading east on Speedway, towards the ranch, the city and its unplanned sprawl retreat. Fewer and fewer new houses and condominiums are seen. Pecan groves appear, along with older homesteads on acres of land. At the very end of this road, where Tucson ends and the mountains and national forest begin, is the Tanque Verde Guest Ranch.

Guest ranches. Dude ranches. There's not much agreement on what to call them. Tanque Verde is the oldest ranch in Tucson, built in 1858. Most of the others in the valley were built soon after. They all started as working ranches — places where cattle were raised for profit. In the 1920s, many of the ranches started to take guests, too. Dudes were the guests who came to stay on the ranches.

The story goes that when the ranch owners sent their cowboys to meet guests at the train station, the cowboys would joke and say, "We won't have any trouble picking them out, because they'll be dressed like dudes." City folk from the East came dressed to the nines in western garb.

**Cows**

AND dudes don't always mix, is a common saying in the area. As Cote puts it, "It takes a rather talented

person who can wrangle cows and at the same time turn around and be hospitable to a lot of guests." In 1950, seven years before Cote's family bought Tanque Verde, the last cow was sold and the ranch catered only to guests.

Bob Cote, 44, is over six-feet tall, and although he is heavy set, he is not fat. His hair is slightly graying around the temples. His blue eyes are set off by a chunk of turquoise that hangs from a string tie around his neck. He is dressed in blue jeans, a work shirt and a Mexican-style vest.

Ten years ago Cote was an academic working on a Ph.D. in agricultural economics at the University of Tokyo in Japan. It was there he learned Japanese, a

Before the ranch season opened, Cote's family asked him to run the place, just for one winter. Feeling obligated, and yielding to parental pressure, Cote agreed. He has been there ever since.

"People always ask, 'How can you leave the Ph.D. field and come run a guest ranch?'" Cote says the two are similar. In both cases, he is involved in his work 24 hours a day. As an academic he was always thinking about his work. "Here, I'm on call 24 hours a day," he said of the ranch.

"If I had to do a banker's job or whatever, where I had a specified hour and after that hour I had to go do something else, well that would be a real change in my life," Cote added. ➡




**Guest house at White Stallion**



**Bob Cote**

language he speaks so well that on the phone he cannot be distinguished from a native. When he greets his Japanese guests in their tongue, "it blows their mind."

It was also ten years ago that Cote was back home (he's from Edina, Minnesota) writing his thesis. (For many years his family owned a boy's and a girl's camp in Brainerd, also in Minnesota. They bought the Arizona ranch as a place to employ their camp staff during the winter months.)

 "It takes a rather talented person who can wrangle cows and turn around and be hospitable to a lot of guests."

# Not

EVERYBODY falls into the guest ranch life as effortlessly as Bob Cote. For some, it was a deliberate decision. Allen and Cynthia True have owned the White Stallion Ranch for fourteen years, but a ranch was not always in the cards for them. The Trues wanted to escape the cold Denver winters, and Arizona was where they wanted to be. At first, they thought of moving to Scottsdale or Phoenix, but "they were so big we didn't want to go there," Allen True said.

True, an engineer who had worked with oil companies in Denver, had a three-page list of job possibilities in Arizona. At the very bottom of that list, according to Cynthia True, were the names of three guest ranches for sale. She recalls how she told her husband to forget the ranches — there was no way she would live on one.

"Famous last words," said Cynthia True as she stood in the lounge at White Stallion, surrounded by guests who were drinking, playing cards and backgammon, and talking about how cold it was back home.

One by one, that three-page list was narrowed; the possibilities either were too expensive or just not right. Finally, the Trues stayed at White Stallion for about a week, and at the end of their visit Cynthia True said, "You know, if I could get up in the morning and look at that mountain, let's buy it."

The place was "awful" when they bought it. It did not have a house for the Trues and their two sons — one five and the other an infant. It had only four small guest houses and limited recreation facilities. Today White Stallion has thirty guest units, a separate home for the Trues, a jacuzzi and hot tub, a swimming pool, tennis courts, a renovated dining room and enough guinea hens and peacocks to keep away the rattlesnakes.

# There

IS no typical day for either Cote or True, but neither man gets involved with riding, the major ranch recreation. Wranglers and cowboys are hired to tend horses and ride with guests.

no major construction projects are foreseen. Most of Cynthia True's job is "sitting behind a typewriter, writing letters and doing reservation charts."

# In

THE early years though, she spent most of her time raising their two boys. Raising a family on a ranch has its problems, she said. "I think the bad part of it is that these boys are raised like millionaire's kids. They sure as heck aren't. But you know, they have tennis courts around and horses. They have a swimming pool. They have all the advantages that a millionaire's kids would have, but of course they aren't. I just wonder how they're going to like it when they go out in the cold cruel world."

Raising a family on a ranch poses a problem for Cote, as well. He and his wife Dee Dee Worthing, a St. Louis Park woman, have two children, five-year-old Brett and Carra, two.

"The problem with raising children in an environment such as this is they potentially become very spoiled," Cote said. "You can't discipline your children," he said, recalling several experiences with Brett. Brett's feelings might get hurt if he's punished, but he'll quickly befriend a ranch guest "and then all his bad feelings are erased," Cote said. "That's hard on a kid."


Cynthia True says that her two sons talk about taking over the ranch some day, but she hopes they find something else to do. "I don't approve," she said. "I think everybody ought to get out and make his own way in the world."

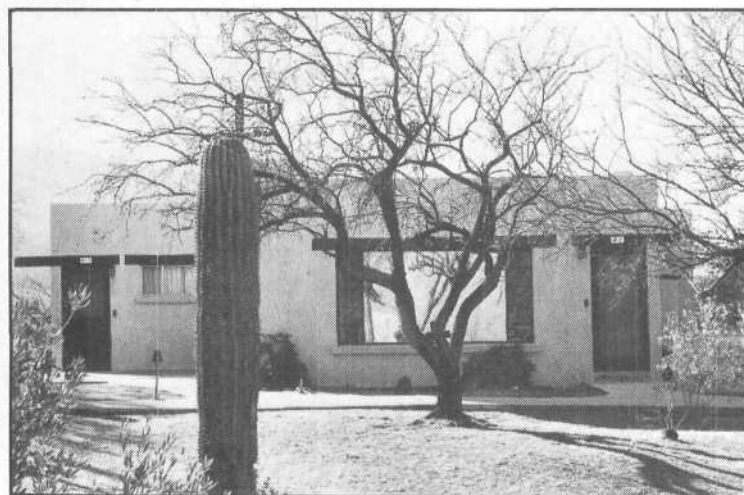
Cote says he is an exception and that sons seldom take ranches over from fathers. One reason he took over his family's business is that he never had seen the ranch until he went down to manage it.

"Usually somebody sells it and you get a new family to run it," Cote said. "The reason is, I think, that the sons see how much work it is and decide that they don't want to have anything to do with it." That also accounts for the declining number of ranches, Cote said.

Both Cote and True agreed that ranches are also disappearing because they have been overgrown by the city. White Stallion with 1,500 acres, and Tanque Verde with 480, have survived because of their size and because of their location — both are buffered by national land.

Ranches are also vanishing because it is not a profitable business, True said. "Without going into it in great detail, for the amount of work and the amount of investment you've got, you do not show return on your money."

Despite these drawbacks, True says he wouldn't stay in the business if he did not enjoy it. "The way I best sum it up is, you buy a way of life." 



**Guest house at Tanque Verde Guest Ranch**



"I think my main job is to go around and see that some peoples' nerves aren't getting on somebody else's nerves."

Cote says it is difficult to describe a typical day, although much of his time is spent in an office. If a clerk is absent, he works the desk. He organizes the rides and he makes sure the wranglers are at work, the kitchen help is going and the rest of the fifty staff members are doing their jobs. "I think my main job is just to go around and see that some peoples' nerves aren't getting on somebody else's nerves," Cote said.

Allen True rarely rides with his guests because he does not have the time. However, the Trues have done everything themselves on their ranch, including designing new buildings and remodeling old ones. "There isn't anything on the ranch really that I haven't done at one time, even including cooking dinner," Allen True said. "I've taken rides out, I've washed dishes, I've cleaned rooms, I've done laundry."

Today the Trues have built up the ranch to a point where it is almost complete and



# *A Bit of* **Desert HONEY**

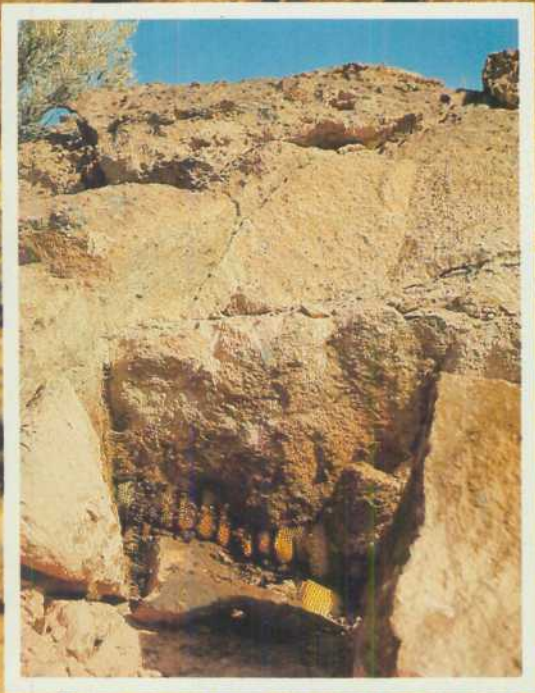
BY JULIA CRAW

**M**AN'S association  
with the honeybee  
reaches back 30,000  
years and probably  
much more. A cave

PHOTOGRAPHS BY  
ANDREW CRAW










painting of that age in Valencia, Spain shows a Stone Age hunter climbing a cliff wall to rob a wild bee hive. By the age of the Pharaohs the bees had been domesticated and Egyptian beekeepers were floating their mud and straw apiaries up and down the Nile River, letting their subjects out to harvest the riverside crops as they came in season.

When the Hebrew people went out of Egypt into the desert they followed the Lord's promise to deliver them into a "land of milk and honey." From where the milk would have come is debatable but there is little doubt that the honey would be found in cracks and crevices of the limestone cliffs and caves of the Palestinian desert; produce of the thistles, the cacti, all the thorny, prickly flowered plants of the desert, stored by wild desert bees.

**I**  **N ALL THE DESERTS** of the world but ours, honeybees were there ahead of man. There were no native honeybees in North America when the first Europeans arrived. Black and gold Italians and the gentle Caucasian honey-makers were the first livestock importations to the new land, brought in by the Spanish explorers and proselytizing padres early in the 16th Century. From the crowded mission hives the bees swarmed to the edges of the deserts, swarmed and swarmed again, spreading and inhabiting all parts of their new world. After 500 years all parts of our land know the honeybee, once domesticated and now gone wild and become such a natural part of our environment that we accept it without thought or notice as having always been there.


The wild honeybee's hive is one of the desert's best-kept and amazing secrets. Few people realize they are there and when you do you are hard put to find one. When you encounter bees on a desert flower more than two miles in any direction from an apiary, you can be certain there is a hive hidden in the brush or rocks somewhere within that two-mile radius. But knowing it is there is one thing — finding it quite another. You can search surrounding ledges of rock, watching and listening for sight or sound of their well-hidden home, or you can use a bait box and syrup to "bee-line" them to their hive. But neither method is easy nor guaranteed successful. Desert bees, warm, well-fed, content, are docile and quiet and almost invisible around the hive. It is quite possible and very probable, even, that you will pass unaware within arm's reach.

**(Left) Desert bees nest in rock crevasses well camouflaged from casual observation.**

An average beehive will hold from 50,000 to 100,000 bees, ruled by a single queen. When a hive becomes crowded bees will select a particular larva (a baby worker bee), give it a special cell and start feeding it the mysterious royal jelly which will turn it into a new queen. When the baby queen hatches and is ready to depart, a part of the worker bee population will surround her and "swarm" with her. From the swarm, as it flies, scouts go ahead to choose a new home. In inhabited country it may be an opening in an old building, near woods it will be a hollow tree or fallen log. In the desert they have no choice but rocks and here they will seek a crack with openings behind it large enough to hold an adequate supply of honeycomb for the future colony.

mesquite light amber, sturdy rabbit brush dark and strong but pleasant to taste. Nectar from every blossom in the area will be stored in some of the shining vaults — the yucca, the prickly pear, the ironwood, the agave, the sunflower, the aster, the sand verbenas, the canyon rose, and the greasewood. The wild honeybee may have her preference but she neglects no source of sweetness available to her in its season.

**I**  **T IS CLAIMED** by those who presumably have had the time to count them that the honeybee will visit 100

**T**  **he honeybee will fly a distance equal to four transcontinental trips to produce a single pound of honey.**

**P**  **EERING INTO**


 a desert beehive is looking into a miracle of color, form and harmony. The queen in her brood chamber is the focus of the hive, hanging in a well-guarded position near the entrance, a position chosen for maximum protection, care and homage. If you are lucky enough to find a hive and luckier still in finding one with loose rock which can be moved without undue disturbance, it is quite possible to examine the miracle, use your camera on it, and even sample the wild honey without alarming the worker bees.

Beyond the queen's chambers, in whatever direction the rock fissures extend, hang the layers upon layers of golden honeycomb. Each individual wax cell, a perfect hexagonal prism, will be made not only to fit into all the other cells but to conform to the rock surfaces to which it is attached with exact symmetry. Break off a loaded slab and take it with you. Replace the rocks and return next season, and you will find the empty space filled with a new comb as perfect as the old.

The translucent honey cells, filled and capped for storage, glow in varying shades of color, from palest blonde to dark amber depending on the blossoms from which the nectar was gathered. Scarlet pentstemon will be white, feathery

blossoms to collect one-third of a drop of honey. And that she will fly a distance equal to four transcontinental trips to produce a single pound. Yet it is not unusual to find a desert beehive containing fifty pounds of surplus honey. Old ones have been observed which were actually overflowing with honey seeping from the cracks of the rocks.

But desert honey, sweet as it is, is not the only boon conferred upon us by the bees. For 50,000,000 years honeybees have been helping to create a prettier world. The worker bees of a single hive will visit an estimated 250,000 blossoms daily. With each visit they collect and distribute from blossom to blossom the fertilizing pollen necessary to the plant's reproduction. Without this distribution of pollen, the scientists tell us, as many as 100,000 species of plant might be altered or disappear from the earth entirely. Without the bee and the golden dust it carries on its legs, the deserts would be less radiant after a rain, more true desert of lifeless rock.

So, whether or not we ever open a wild beehive or sample wild honey, we are still the recipient of the bee's contribution to desert beauty. Buzzing and dipping over sage and cactus and prickly poppy, he is helping to preserve the color and the life of the desert. Was Isaiah thinking of the honeybee when he said, "The wilderness and the solitary places shall be glad for them; and the desert shall rejoice and blossom as the rose?" 





The real-life Ramona bore little resemblance to her romanticized characterization by Raquel Welch and others in the annual festival depicting her life.



# JUSTIFIABLE HOMICIDE CALIFORNIA-STYLE

*A killing that might have gone unnoticed in this country became the focus of national attention because of a determined woman who crusaded for better treatment of California Indians. With the incident she not only stirred reform but made famous the name of Ramona.*

THE EVENT THAT provided Helen Hunt Jackson with the much-needed climax for her crusade was the shooting of Juan Diego, a Cahuilla Indian, March 24, 1883. He was shot to death by Samuel Temple, a white man and resident of San Jacinto. The killing took place in the doorway of the Indian's home in the mountains southwest of Hemet and San Jacinto. His wife, Ramona, witnessed the shooting.

Her husband had been accused of stealing Temple's horse the previous day in San Jacinto. Juan Diego had left his own pony at the livery stable and ridden the white man's larger animal up the mountain trail to the couple's cabin.

Since it was the law of the times that no Indian could testify against a white person, Ramona's version was never entered in court records. Instead, Temple's account was accepted. He pleaded self defense and was freed on justifiable homicide. The jury consisted of twelve white men.

The case was tried in the Justice Court of San Jacinto township. Presiding was Justice of the Peace Samuel V. Tripp who had come west in 1849, moved to San Bernardino in 1860 and to San Jacinto in about 1869. The official record reads:

**IN THE JUSTICE COURT OF SAN JACINTO TOWNSHIP. THE PEOPLE OF THE STATE OF CALIFORNIA VS. SAMUEL TEMPLE. ACTION: JUSTIFIABLE HOMICIDE.**

**MARCH 24TH A.D. 1883**

**Personally appeared before me Samuel Temple and makes the**

following statement (namely) that he has this day committed justifiable homicide upon an Indian supposed to be one Juan Diego and under the following circumstances (viz) that he, the said Temple, followed the tracks of a horse stolen from him last night from the corral of Hewitt & Jordon in San Jacinto and that the tracks lead to the house of said Juan Diego and that there he saw his horse and upon inquiring whose horse it is, Juan Diego approached him with a knife in his hand and replied it is mine. And further Temple asked where did you get the horse? I got him in San Jacinto, all this time approaching in a threatening manner, whereupon Temple alleges that he ordered him to stop. And the Indian did not heed the order whereupon Temple says, I shot him with shotgun which I carried and as the Indian did not stop coming I shot again and had to use the butt (sic) end of my gun. And I took my horse and returned to San Jacinto.

**Sworn and subscribed to before me this 24th day of March A.D. 1883.**

**(s) S. V. Tripp, J.P.**

Temple demanded a trial in his own behalf for the committing of justifiable homicide under circumstances of self-protection. Tripp set trial for Monday, March 26, at four o'clock.

Again, the court record read for March 26, 1883:

**Case continued to allow time for further evidence until Sat. 31st.**

**And prisoner allowed his liberty under the recognition of the Court for his appearance.**

**Six supenoas (sic) issued for the following named witnesses: Wm. Webster, Jun., Wm. Blodget, George Blodget, Frank Wellman, Wm. Stice and J. C. Jordon.**

**March 31st One O'clock.**

**Court in session:**

**Evidence of all above named witnesses taken under oath and their signatures taken of each as depositions.**

**Defendant's Council makes motion**

by ERNEST MAXWELL

that the deft. (sic) be discharged on the ground of justifiable homicide as no one has appeared to prosecute.

**Motion granted and the prisoner is discharged as it appears that no offense under the law has been committed.**

**(s) S. V. Tripp, J.P.**

IN JULY, 1883, special commissioner Helen Hunt Jackson had written in one of her reports to the U.S. government about conditions and needs of the Mission Indians a more truthful account of the shooting. It appeared later in the September 27, 1883 issue of the New York *Independent*, headlined "Justifiable Homicide in Southern California."

Mrs. Jackson's account was based on interviews in the San Jacinto area where she had been only a few weeks after the shooting. Her version:

"An incident which had occurred on the boundaries of the Cahuilla Reservation a few weeks before our arrival there is of importance as an illustration of the need of some legal protection for the Indians of Southern California.

"... A Cahuilla Indian named Juan Diego had built for himself a house and cultivated a small patch of ground on a high mountain ledge a few miles north of the village. Here he lived alone with his wife and baby. He had been for some years what the Indians call a "locoed Indian," being at times crazy; never dangerous.

"... Juan Diego had been off to find work at sheep-shearing. He came home at night riding a strange horse. His wife exclaimed, 'Why, whose horse is that?' Juan looked at the horse and replied confusedly, 'Where is my horse then?' The woman, much frightened, said, 'You must take that horse right back; they will say you stole it.' Juan replied that he would as soon as he had rested; then threw himself down and fell asleep."

Continuing, Mrs. Jackson wrote that the barking of dogs awakened the couple. Juan ran out of the house, followed by Ramona, his wife. Sam Temple was in the yard on horseback. Upon seeing Juan Diego, according to Mrs. Jackson's account, he



"poured out a volley of oaths, leveled his gun and shot him dead. After Juan had fallen on the ground Temple rode closer and fired three more shots in the body, one in the forehead, one in the cheek and one in the wrist, the woman looking on. He then took his horse, which was standing tied in front of the house, and rode away."

Mrs. Jackson wrote that later she talked with one of the jurors, "a fine, open-hearted, manly young fellow." He said:

"I don't care whether the Indian had a knife or not. That didn't cut any figure at all the way I looked at it. Any man that'd take a horse of mine and ride him up that mountain trail, I'd shoot him whenever I found him. Stockmen have got to protect themselves in this country."

The young juror, however, was critical of the shots fired after the Indian was dead. "Well, I'll agree that Temple was to blame for firin' into him after he was dead. That was mean, I'd allow."

ONE PERSON WHO was familiar with the incident and made detailed notes of the Ramona country and other regions of Southern California was the writer and photographer, George Wharton James. In his book, *Through Ramona's Country*, published in 1908, he relates an occasion when he managed to get Ramona's voice on a graphophone while at the widow's cabin. The device frightened the Indian, but James was able to catch most of her comments.

As James took photographs, Ramona spoke into the graphophone. The time was several years after the killing, but Ramona was apparently still grieving.

Her story:

"There are many times when I lie down out of doors, tired and weary, but I cannot sleep. How can I sleep? I am alone, and as I roll and toss, all at once I think I can see that wicked man riding up to the top of the hill and looking down upon our little home, and I hear him cry, 'Juan Diego. Juan Diego!' Then I see my poor husband, tired and sleepy almost to death, stagger to the doorway, and that wicked man, shouting foul oaths, put his gun to his shoulder and fire, bang! bang! — two shots — right into the heart of my poor husband. And I see him fall across the doorway, and although the blood was oozing from his dead body, and I knew I had now no husband, that cruel, bad man pulls out his little gun and fires again, ping! ping! ping! four more shots into his dead body."

While there are various versions of the incident, it is generally believed that Temple shot Juan Diego in the doorway without much warning. When interviewed about thirty years ago, Isadore Costo, a native Cahuilla, recalled the day Ramona came to his house with the baby. She said her husband had been shot without warning. Ramona gave some details.

BECAUSE INDIANS AT that time literally had no rights, their side of the killing was never officially recorded. There was no investigation and had it not been for Mrs. Jackson's concern for California Indians and her novel, *Ramona*, the event would have remained virtually unnoticed in court archives.

Juan Diego's "spells" were well known. Before her death, Victoria Brooke of Hemet and the oldest surviving child of Charles and Genoveva Thomas, said he worked for her father as a sheep-shearer on the Thomas ranch in the San Jacinto Mountains. She recalled he was a good worker but when the moon was full he was "taken with a fit." Juan Diego was tied to a tree for the night or until the seizure wore off. Ramona also helped on the large cattle ranch where Mrs. Jackson visited at one time, according to Mrs. Brooke.

Presumably he was in a confused state that morning in San Jacinto when he took Temple's horse instead of his own. Mrs. Jackson noted he had ridden from Colton the previous day where he had gone to seek work as a sheep-shearer.

The author of *Ramona* undoubtedly obtained first details of the shooting from Miss Mary Sheriff, a teacher at the Indian school in Soboba, a short distance from San Jacinto. However, another account credits Mrs. J. C. Jordon of San Jacinto as the person who gave Mrs. Jackson the information. The crusader was a guest of the Jordons shortly after the incident. Mrs. Jordon was written into the novel as "Aunt Ri."

According to Mrs. Jordon, their guest complained that she needed something to dramatize the plight of California Indians. "If I only could present this (the condition of the Indians) in some way that the public would hear! If I only could write a story as Mrs. Stowe wrote of Negro slavery (*Uncle Tom's Cabin*)!"

The killing of Juan Diego did it. Mrs. Jackson had the spark that touched off a social explosion. She was to return to her Colorado Springs home to do most of the writing for a novel that was the final chapter of her campaign. She died in 1885 at the age of 53 after a disastrous fall down stairs in her home. By then the novel was in print.

Some of the trouble stemmed from attitudes incorporated into state law after the discovery of gold in 1848. For instance, the California legislature from 1850 to 1855 passed three laws that relegated native Indians to an American version of the Spanish-Mexican peon system.

One law denied them the right to testify in court. Another decreed that any Indian, upon word of a white man, could be brought into court and declared a vagrant. He could then be put up for auction and sold as a laborer to the highest bidder for a period of four months without compensation other than his keep.

A third California law decreed that any Indian adult or child could be bound over to a white citizen for a term of years, being paid for his labors only in subsistence. Furthermore, land ownership required legal filing, and since most Indians were uneducated they were unaware that their land could be taken from them.

While Mission Indians sank lower on the social scale, the mountain Cahuilla continued to live in industrious, peaceful communities. In an 1883 report Mrs. Jackson contrasted the two different positions of Indians in Southern California. In describing life in Ramona's area, she wrote:


"... (They) are cultivating ground, keeping stock, carrying on their own simple manufactures of pottery, mats, baskets, etc., and making their living — a very poor living, it is true, but they are independent and self-respecting in it and ask nothing of the United States Government now, except that it will protect them in the ownership of their lands."

IT WAS AGAINST this background of abuse that Mrs. Jackson began to gather material for the novel that focused attention on the plight of California Indians. She fictionalized much of the story to dramatize the situation. Juan Diego's name was changed to "Alessandro" and he was elevated from his real position.

Her warm and friendly contacts with Mexican families, along with their ranching way of life and customs, became part of the scenario. Ramona wasn't confined to her remote mountains scene. And a friendly padre of the Santa Barbara area was fitted into the book.

Today, the name of Ramona is all over California. Schools, streets, towns and businesses bear her mark, as they do that of Alessandro. Her novel has survived more than 150 printings, made into at least three movies, staged in theatres and performed for thousands each spring by the people of Hemet and San Jacinto. Begun in 1923, the Ramona Pageant is a community enterprise that attracts crowds to an outdoor amphitheatre in "Ramonaland."

The pageant brings to its audiences the color of Mrs. Jackson's times. There is an interweaving of three cultures, those of the Indians, Mexicans and Anglos. Along with the tragedy there is the warmth and hospitality that marked a California era when ranches were measured in the thousands of acres.

The fall downstairs brought on complications and on August 12, 1885, Helen Hunt Jackson died. However, Ramona (Lubo) lived to benefit, dying in the San Jacinto Valley on July 21, 1922, less than a year before the start of the festival that has honored her and her people since that time. 

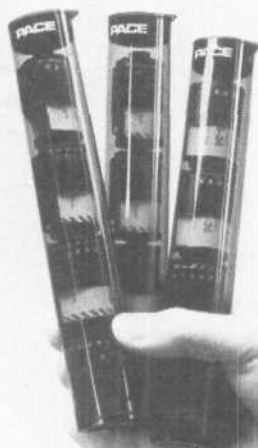


# Desert

## NEW PRODUCTS

### FILM ORGANIZER

Tired of groping for film in your tote bag or automobile glove compartment? A neat little, pocket-sized container called Filmpak may be the solution. It's a smoke-tinted, transparent plastic tube that holds four 35mm or three 120mm rolls and takes up but one-third the space of packaged film. Snap-on caps at both ends let you slip exposed rolls into the bottom while taking a fresh roll from the top. The maker, Sima Products Corp., claims Filmpak to be unbreakable; a better description would be flexible but sturdy. They retail for \$1.49 each at most camera shops and are worth it, so our photographers here at **Desert** say.



### POCKET-SIZE "TRIPOD"

We know from our own experience that many an otherwise fine photograph has been spoiled by inadvertent camera movement but we still chance these failures because a conventional tripod is impractical for use in the field. But what seems to be a partial solution, at least, to the problem is the pocket-sized 6M Vise Mount which can be clamped onto a car window, fence rail, tree limb or any other stationary object up to two inches thick. There's a pan feature with 180 degree traverse and the clamping pads are rubber cushioned to provide a firm grip. The clamp screw is purposely coarse-threaded for quick mounting. The mount will fit readily into an automobile glove compartment and is useful to steady shooting scopes and binoculars as well as cameras, both motion picture and still. The mounting screw is 1/4 x 20. If you can't find the 6M Mount at your local camera



store, write Tasco Sales, Inc., 1075 N.W. 71st St., Miami, FL 33138. Please say you saw it in **Desert** Magazine.

### SILICON SHAVE



The only clean-shaven prospectors we know out here are women (well, most of

them anyway) but for those secretly not-so-macho men who let this daily ritual of civilization go simply because shaving gear is a nuisance to backpack, Klear Shave may be the answer. You place a drop of this silicon-based product on your razor and hack away in the normal manner. No need for after-shave lotion either; a fragrance is already incorporated in the solution. Its makers also note you can see what you're doing while shaving, a point that makes sense for those with rear-view mirrors on their burros. If you can't find Klear Shave at your local drugstore, send \$3.99 for one tube (six-month's supply) to Silico Industries, Inc., 2820 N.E. Fourth Ave., Pompano Beach, FL 33064.

### MOBILE CB FROM RCA

Perhaps the state of the CB art at a reasonable price is RCA's new Model 14T276 with a concealable, compact chassis and a detachable mike containing LED digital read-out of forty channels, an electronic channel selector, channel 9 emergency switch, squelch control and transmit-receive indicator light. A six-foot extension cord is provided for behind-dash or under-seat mounting, and an eighteen-foot cord for trunk installation is optional. The technical specs, such as better than -70 dB spurious rejection, sound impressive and probably are to those that understand them. And you can hook it into your car radio speaker(s) with an optional relay unit. Suggested list price is \$207.50 at RCA dealers everywhere, not including an antenna.

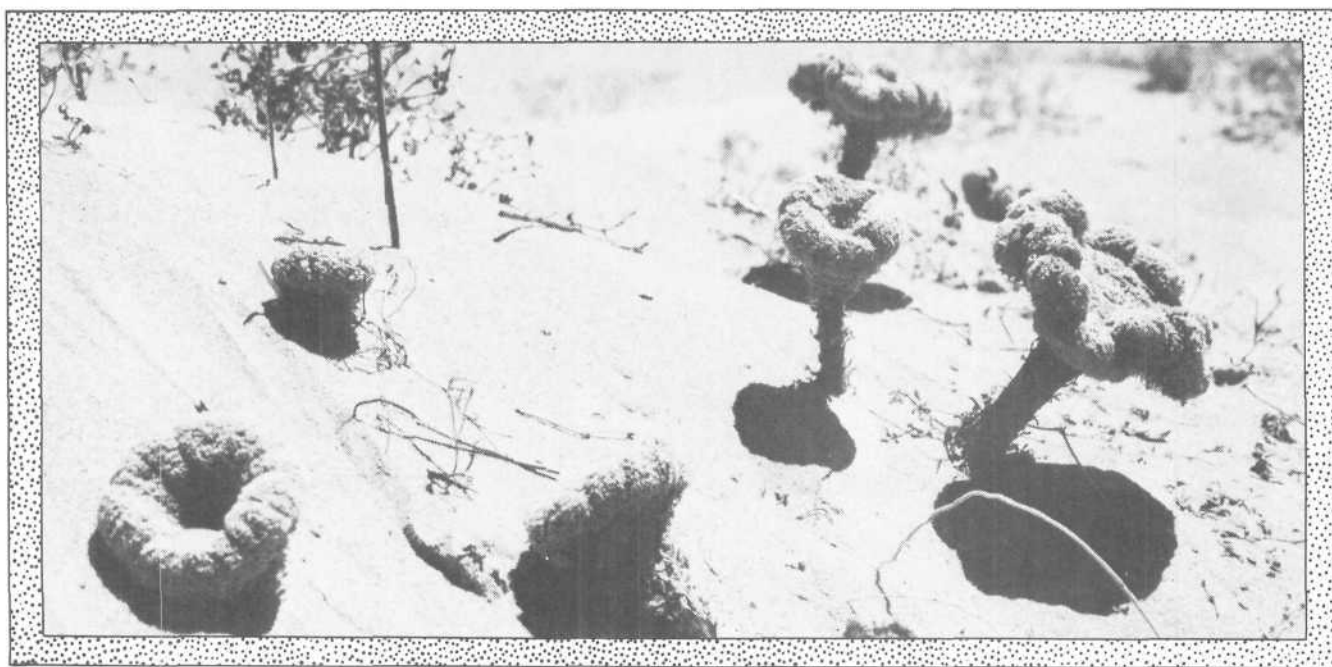




# SAND FOOD:

## The Strange Wild Vegetable of the Papagos.

Article and Photographs by Wayne P. Armstrong



ONE OF THE LANDMARKS ALONG Interstate 8 between El Centro, California and Yuma, Arizona is the Algodones Dunes, an enormous chain of sand dunes that once was a formidable barrier to highway travel. It seems totally barren, but if you park along the access road and walk across the dunes during late spring you may notice strange, mushroom-like flower heads on the surface of the sand. At first glance they look like mushrooms or toadstools, but close inspection will reveal tiny lavender flowers embedded in the woolly mats. Since mushrooms don't have flowers growing out of them, you may think the sun is getting to you. Actually you have discovered "sand food," one of the strangest and most interesting plants in North America.

The gray, fuzzy flower clusters of sand food may be up to five inches across, and look like big flat buttons or powder puffs on the sand. Each little flower produces twelve to twenty tiny seeds or nutlets arranged in a circle like wedges of cheese. The seeds are less than a millimeter in diameter and each flower head produces thousands of seeds. The woolly mats are practically the same color as the sand and are difficult to spot unless you know what to look for. This is the only part of the plant that is visible above ground. Below the flower head is a fleshy, scaly, brittle stem that may extend several feet below the surface where it is attached to the lateral root of a nearby shrub. Out of curiosity I decided to carefully trace one stem to its junction with the host shrub. After several hours of tedious digging in the soft sand, I found the stem to be nearly five feet long!

SAND FOOD WAS ORIGINALLY discovered in 1854 by Colonel Andrew B. Gray while commissioned by the federal government to survey a possible railroad route to

the Pacific coast by way of the arid southwest. When Colonel Gray progressed westward as far as Sonoyta, Mexico he obtained the services of a Papago chief to guide his party across the arid desert. When they reached the Algodones Dunes the chief dismounted from his horse and began digging with his hands. To Colonel Gray's astonishment the chief pulled a number of fleshy stalks from the dry sand. In a letter to Dr. John Torrey, a noted botanist of that time, Colonel Gray described his first gastronomic encounter with sand food:

"We encamped for the night in the sandhills, and the chief, instead of supping with us, as usual, made a fire, and roasted his roots or plants on the hot coals (which took about twenty minutes), and commenced eating them. None of the party seemed inclined to taste, but, out of courtesy, I moved over to the chief's fire, and he handed me one. At first I ate but little, and slowly, but in a few minutes, so luscious was it that I forgot my own mess, and ate heartily of it; next morning each of the party followed suit and afterwards there was scarcely enough gathered to satisfy us. The taste, though peculiar, was not unlike the sweet potato, but more delicate."

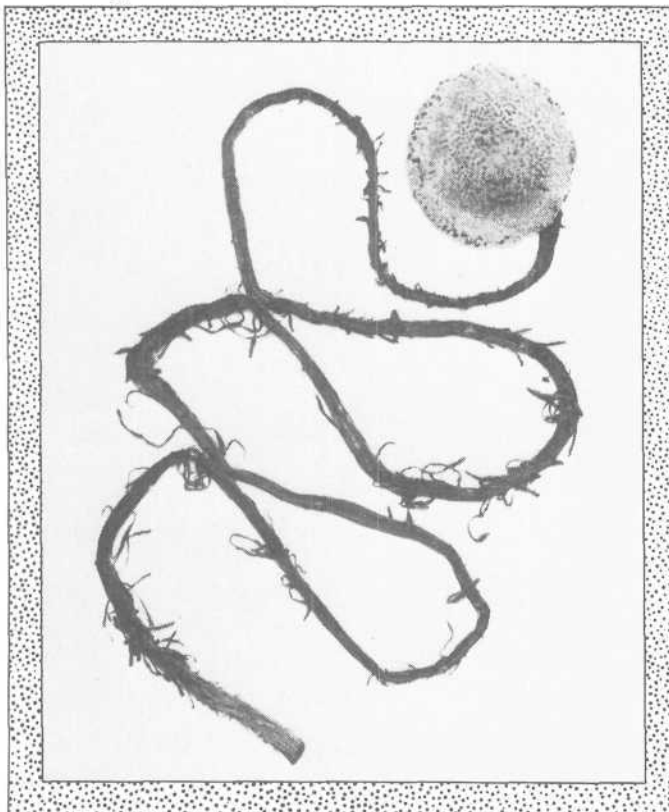
THE GENERIC AND COMMON names of sand food refer to the fleshy, edible stem. *Ammobroma* is derived from two Greek words meaning sand (*ammos*) and food (*broma*). The juicy stems were a highly prized food for several tribes of southwestern Indians, including the Sand Papagos and Cocopas. The stem was eaten raw, boiled, or roasted over the coals of a campfire. According to Colonel Gray, it was also dried in the sun and ground on a *metate* with mesquite beans, forming a flour called *pinole*. The Sand Papagos have frequented the extensive chain of drifting sand dunes for centuries to harvest large



quantities of sand food which they called *biatatk*, meaning sand (or sand hill) root. It was called *oyutch* by the Cocopa Indians of Baja California and Sonora, Mexico.

According to Dr. Edmund C. Jaeger, a foremost authority on desert plants, sand food stems when roasted resemble well-browned yams in flavor. Juicy, uncooked stems can also quench the thirst of parched desert travelers. Several naturalists have raved about the flavor and nutritional value of sand food, both raw and cooked. It has been described as more tender and juicy than a radish, with a flavor resembling the head of a cabbage or a sweet potato.

The latter comparison seems to be more popular among sand food connoisseurs. Perhaps it could be grown as a vegetable in arid sand dune regions! To me the juicy, crisp, uncooked stems in spring are delicious. I have also found the tasty stems deep in the sand during winter; however, I must confess that I feel rather



Mushroom-like sand food buttons (opposite page) are attached to a buried, edible root or stem (above) sometimes five feet long.

guilty eating them since the plant is listed as "very rare and endangered" by the California Native Plant Society. Near the end of the flower season (June in Imperial County), the stem becomes chewy and fibrous, similar in texture to mature, uncooked asparagus stems.

THERE ARE SEVERAL DIFFERENT species of colorful and interesting root parasites in the southwest, but probably none are as bizarre as sand food. It is completely dependent upon its host shrub for water and nutrients. Several host plants have been reported but the most common in California are two species of *Coldenia*, low, rounded or mat-like shrubs with small, oval leaves and prominent venation. It also commonly parasitizes the roots of the endemic dune buckwheat (*Eriogonum deserticola*), a large, woody buckwheat with picturesque, twisted trunks and long, deep roots that are often exposed by shifting sand.

In the early 1930s Franklin A. Thackery made a remarkable discovery of sand food growing near an irrigation canal northeast of Calipatria, California. When the roots were excavated he found 106 fleshy sand food stems arising from a single attachment on

the lateral root of a small arrowweed (*Pluchea sericea*). The host plant, including its root system, weighed 1-1/4 pounds while the sand food parasite weighed 46 pounds! Trying to excavate around sand food stems to locate the host connection is very difficult because they are so brittle and weak. In fact, Mr. Thackery found it necessary to suspend each of the 106 stems with separate strings. His remarkable photograph in *Desert Magazine* (April 1953) looks like a sand food puppet show.

When moisture is available the sand food stem is able to store considerable quantities of water and then dry up after the spring flowering season, when the available moisture is gone. Microscopic photographs show the stem to be composed primarily of water storage tissue similar to that of cactus and other succulents. Dried stems may shrivel to less than one-quarter of their original diameter and eventually disintegrate in the sand. According to numerous field observations by Mr. Thackery, sand food appeared not to "overtax" its host. However, it does seem extraordinary for an obligate parasite (entirely dependent upon its host), such as sand food, to outweigh its host by more than 36 times.

SAND FOOD BELONGS TO a very small and little known family of root parasites, all endemic to western North America, Mexico, and Colombia. The only other member of the family native to the southwest is sand plant (*Pholisma arenarium*), another native of sandy washes and dunes that looks more like a stalked fungus than a flowering plant. The fleshy, scaly stem is similar to sand food except the flowers are produced in a compact rounded or oval cluster. Each tiny purple flower has an attractive white border. Although it is not usually mentioned as Indian food, the fleshy stem is somewhat palatable and was undoubtedly eaten by some tribes throughout its range.

The primary purpose of the above-ground parts of subterranean root parasites is to produce flowers and ultimately seeds. Little is known about the pollination of sand food, although the flowers are probably visited by flies, butterflies, beetles, or small bees. I have also seen mature flower heads of sand food literally infested with small ants and mealybugs. Perhaps the ants were after the small seeds, or, more likely, were tending the mealybugs in order to obtain their sweet secretion known as "honeydew."

ONE THING THAT HAS ALWAYS intrigued me about sand food is how does the root of the young seedling find the host root deep within the sand? The actual junction may be 24-inches deep, or considerably deeper. The seed contains very little stored food and, since the plant is a parasite without green, photosynthetic leaves, this is a tremendous distance to grow without any apparent nourishment. The tiny seeds are produced in large numbers and may move downward through sand or may be buried by gradually shifting sand dunes which are subsequently colonized by new host vegetation. Even in sand dune areas that appear relatively stable, local drifts around host shrubs can cover objects very quickly. In this case the seeds must remain viable for extended periods of time. Or they may become attached to the host root when both are seedlings, or when the roots of the host are exposed by blowing sand. Exposed lateral roots of dune buckwheat and other host shrubs are common among populations of sand food flower heads. I have not verified this, but certain ants, such as harvester ants, could possibly carry the small seeds into their storage burrows deep in the sand. Rodents could also carry the juicy stems and seed-bearing flower heads into their numerous burrows beneath the host shrubs.

I have observed new flowering stems and the dried remains of the previous year's stems arising from near the same junction with the host root. Therefore, sand food is probably a perennial and sends up new stems each year. This would undoubtedly account for the appearance of flower heads in the same general location around the same host shrub each spring. However, the germination and establishment of sand food seedlings is still a mystery waiting to be solved by a patient, persistent student. Z



# *RICHMOND*

## *OREGON: Alive and well, thanks*

**H**ERE AND THERE in sunbaked central Oregon, mountains shaped like flat-topped teepees rise toward the skyline. Among them, a hundred years ago, flocks of grazing sheep, 7,000 or more in each,



*Story and Photographs by Emily J. Horswill*



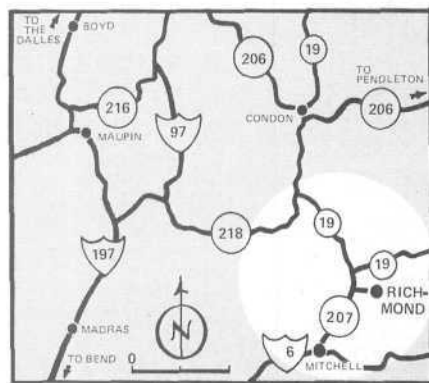


*to one man and his menagerie.*



*Church (left) survives, equipped and nearly intact, and is still used for services. Building above was once Richmond's "shopping center."*





*H. E. Bratton, custodian of Richmond, and his burrow, Faustus. "He just wandered down out of the hills one day..."*

triggered gunbattles with cattlemen. Wagoners cracked long whips over six-horse teams pulling heavy loads to supply stations called by such names as Antelope and Fossil.

Now, although an occasional rococo column or an elaborate door hints of the past, the artifacts of the pioneers are crumbling silently into dust with no one to know or care, except at the ghost town of Richmond. There a sheepdog still works at his ancestral profession, as self-appointed guardian for a tiny, red, banty hen. His master is protector of Richmond.

At the outskirts stood a mailbox freshly lettered, "H. E. Bratton." A sign reading, "Park here. Welcome," stopped us. Bratton arrived shortly. He's tall, and now slightly stooped. "No. There isn't a cover charge." He chuckled, "I want people to enjoy, just not *destroy*, Richmond." He added, "In general they mean well, but some think it's a fine place to let dogs run, and they harass my menagerie. Then, Americans are souvenir hunters, and I don't want them to haul Richmond away in pieces."

Would we like a tour? Yes, so he led the way to a long, two-story building. Huge posts held up a veranda. He continued, "Once riders galloped up in a cloud of dust and hitched horses here while they bellied up to the bar." Next to the bar was a dance hall. Inside, as outside, the walls were bleached to utilitarian grey, but the dance floor was solid.

Our host told us, "I worked for Weyerhaeuser for 35 years. Flew all over the world. Got tired of change. When I saw Richmond, the only one of our Oregon ghost towns still in good condition, I decided it would be my retirement project. Now, he admits, "I've found it more work than an old fellow, even on a fourteen-hour-day schedule can manage. Still, I can't hire anyone to do the job right, even if I could afford it."

**B**UT RICHMOND comes to life again on the nights he holds dances. "Much like a 100 years ago," he smiles, "except people ride autos. Come all the way from Portland. Donate whatever they like to dance to a band playing oldies, and they stand one out at the bar. Some stay for church services."

Bratton pointed out a tiny steepled church set on the bank of a coulee. That he keeps locked. He'd show it; but, up on that hillside above town, stood one of the old homes we ought to look in on.

It was fenced and immersed in shade by an encircling veranda, but we could see that ornate glass panes had decorated bay windows. In the yard, a gnarled fruit tree held out shriveled apples, and a once-latticed garden boasted wild roses. They competed with grey-green sage and cactus and the sun soaked everything with fragrance. Soon, the shadows of the coulee seemed appealing.

In the bottom, a spring bubbled. Part of the year, it would form a stream, but now mud squished beneath boards laid as a walkway. When we approached, a flock of geese hissed from the churchyard. As they ran, their heads bobbed above the high grass like right out of Mother Goose Land.

**A**T A PICNIC TABLE near a mobile home, Bratton sipped a beer. On his lap, a banty hen uttered a contented *urr-urr* as he stroked her. After a bit we realized the banty's rear had been plucked bare of feathers. The raw pinholes oozed red. Bratton hastened to assure us, "That's not blood — not now — it's mercurochrome. Trius here took on a police dog to save Penelope," The Scottish sheepdog, the size of a cocker spaniel, yawned, stretched and licked the banty hen's sore bottom. She flinched, then squatted closer. Just then, we heard urgent bleating, Bratton rose, set the hen on the dog's back saying, "That's Nanny. She's

stuck somewhere," and he galloped off toward the noise.

Nanny lay, totally relaxed, calling for help, her head and shoulders under the fence and inside the churchyard, her hindquarters and bulging udder outside. Bratton extricated her.

Nearby, a burro wagged long ears and brayed for attention. Bratton offered him a tidbit and scratched his long ears, saying, "This is Faustus. He wandered down out of the hills one day and hasn't left — not yet." Bratton grinned, and, taking a ring of keys from his pocket, he nodded toward the church.

The lock grated. Hinges creaked as the ancient door swung open. Inside, all was simple, utilitarian. It might have been built by any small community 100 years ago. Folding chairs lined two walls, the only 20th Century accessory.

Bratton led us to the altar, covered with a sunstreaked cloth. "We found this in a cupboard. It was handmade long before the church was built." He removed the altar cloth carefully, adding, "Someone also made this altar."

He ran a loving finger along a seam, "I glued it together. This piece I had to inlay. But this is the reason I moved to Richmond during the tourist season." He turned to the organ. "This must have come around The Horn on a sailing ship, but I had a specialist out to repair it and we're using it at services. See these buttons on the stops. They're easily removed with a knife for souvenirs and they're irreplaceable." And so are the church that shelters them; the frontier shopping mart, known in Southwest sheep country in 1880 as a supply station; and the once comfortable home, surrounded by its garden choked with cactus and sagebrush, and the fence Brandon repaired to protect it. Brandon knows he can't keep Richmond as it is for long. But, he'll welcome you there as long as he's able. **[D]**



# HOME

## ON THE NEVADA DESERT

**N**EVADA'S BOOMERS clambered over and around green and silver sage and ochre and vermillion, mauve and taupe, and dun, tan, and tawny hills. They bypassed foreboding playas and saline sinks and deserts with haunting names like Black Rock and Amargosa. They suffered the grueling, searing summer heat and the pervasive, biting winter cold. They stopped down ill-tasting, unhealthy food and guzzled bad booze.

*by Don Miller*

Wherever they were, most did not intend to stay long in the silver-rich Sagebrush State. The prospectors and miners and speculators of various sorts were there to make their bundle and

return like sated packrats to a more hospitable place where their newfound treasures would assure them all of the creature comforts and some of the niceties of life. Few of them fared better than making bare living wages. The common man remained just that — common. But while they were in Nevada, those common men left some uncommon memorabilia in the form of rather ingenious desert domiciles that they built and lived in. Probably no other western state reflects more creativity in housing "construction" than pioneer Nevada.

Although some treasure seekers slept covered only by a blanket and the vast reaches of the starry sky, others built some



NEVADA HISTORICAL SOCIETY

52,000 beer bottles were used to build this house in Rhyolite, circa 1905.

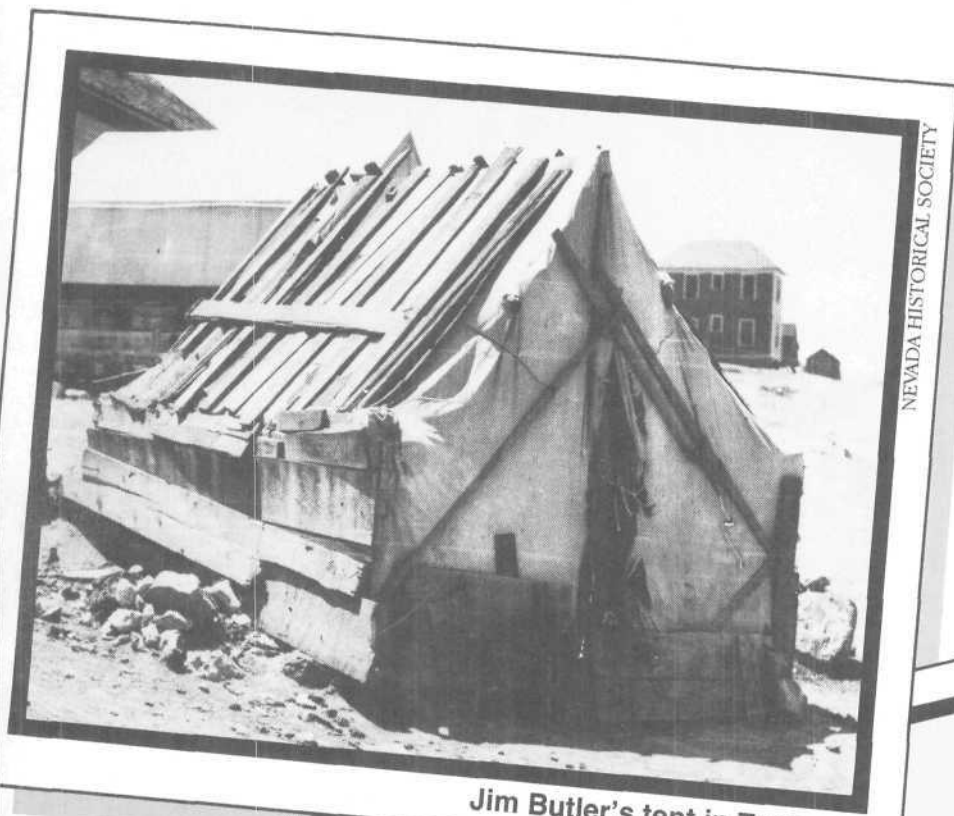


kind of humble hovel that they called home. A few homes were built of log, or were of brick, rock, adobe or frame construction.

However, some sagebrush speculators were so intent on devoting as much time as possible to their whirligigs of chance that they opted for simply digging holes in the ground for use as their homes. These quickie dugout domiciles were at least reasonably warm in winter and cool in summer.

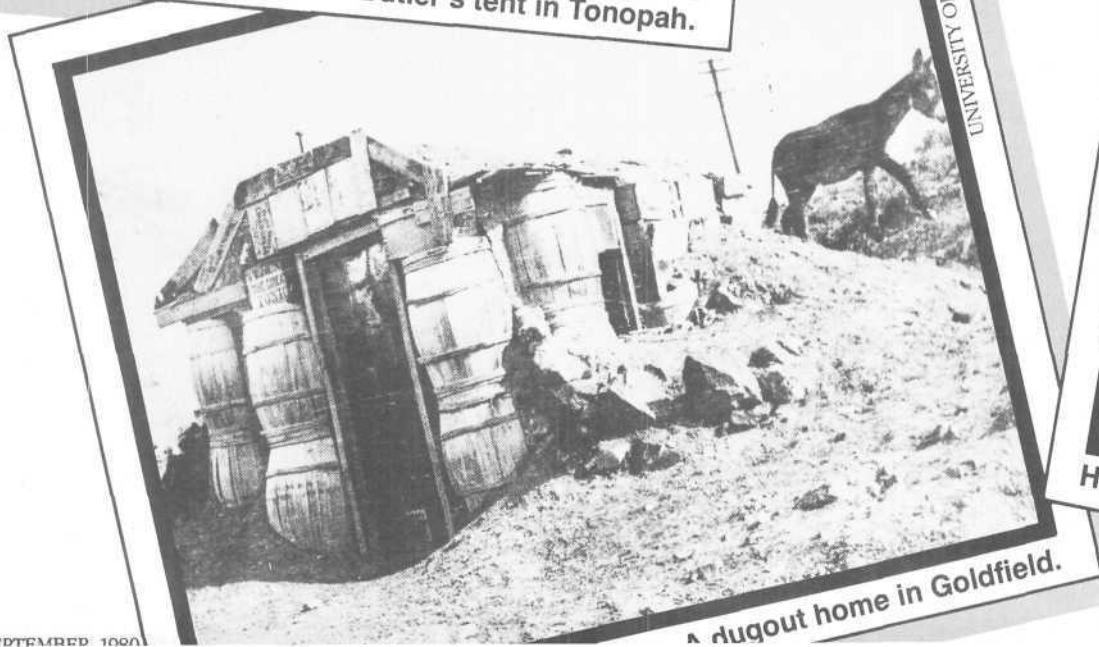
**M**ANY JACKASS prospectors elected to build tents. These canvas creations were easy and inexpensive to construct and to move; although Mark Twain, Bob Howland and

Horatio ("Raish") Phillips had trouble moving their ten-by-twelve-foot cabin in 1862. It was situated near the Chinese section of Aurora so they decided to move the structure to a "better" part of the growing camp. Several of the boys helped move the cabin part of the way but when arriving at the Exchange Saloon, they decided to stop for a few drinks. Soon scores of men came into the saloon and showed blisters that they had supposedly received from moving the cabin. Bob Howland later reminisced that it was very expensive to buy two-bit drinks and that it would almost have been as cheap to buy a new cabin with a mansard roof and an observatory. Some say that up to 250 men got drinks for their real or imagined cabin-moving efforts. Howland claimed that

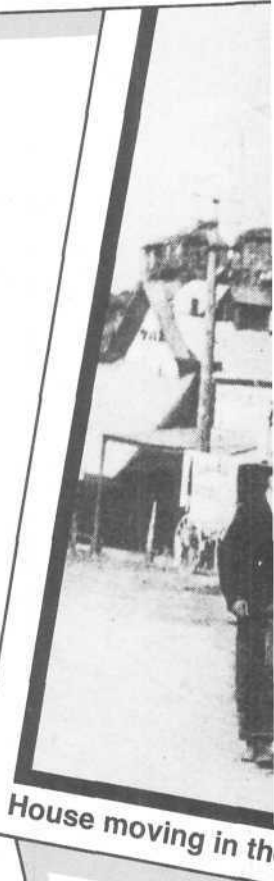


NEVADA HISTORICAL SOCIETY

Jim Butler's tent in Tonopah.

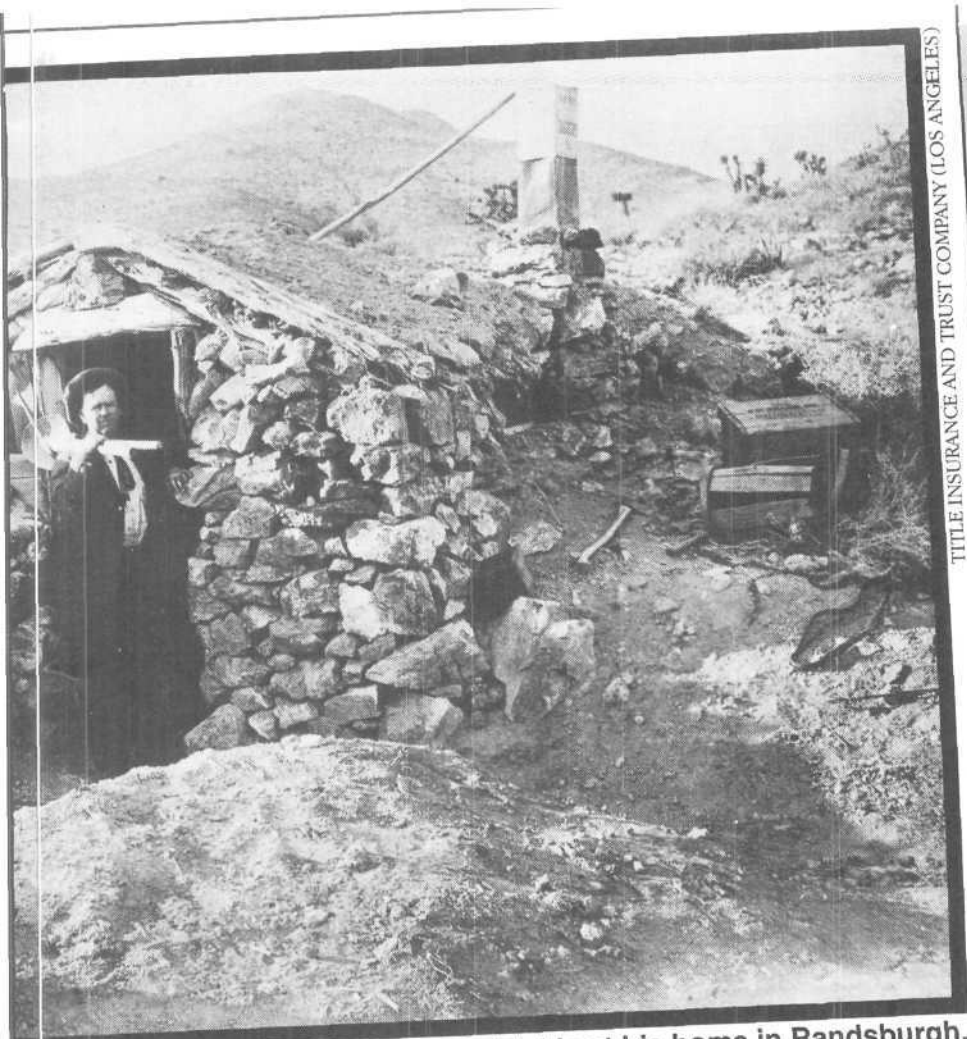


A dugout home in Goldfield.



House moving in the





TITLE INSURANCE AND TRUST COMPANY (LOS ANGELES)

A miner look-alike to W. C. Fields at his home in Randsburgh.

they'd be drinking to this day if he hadn't put a stop to it.

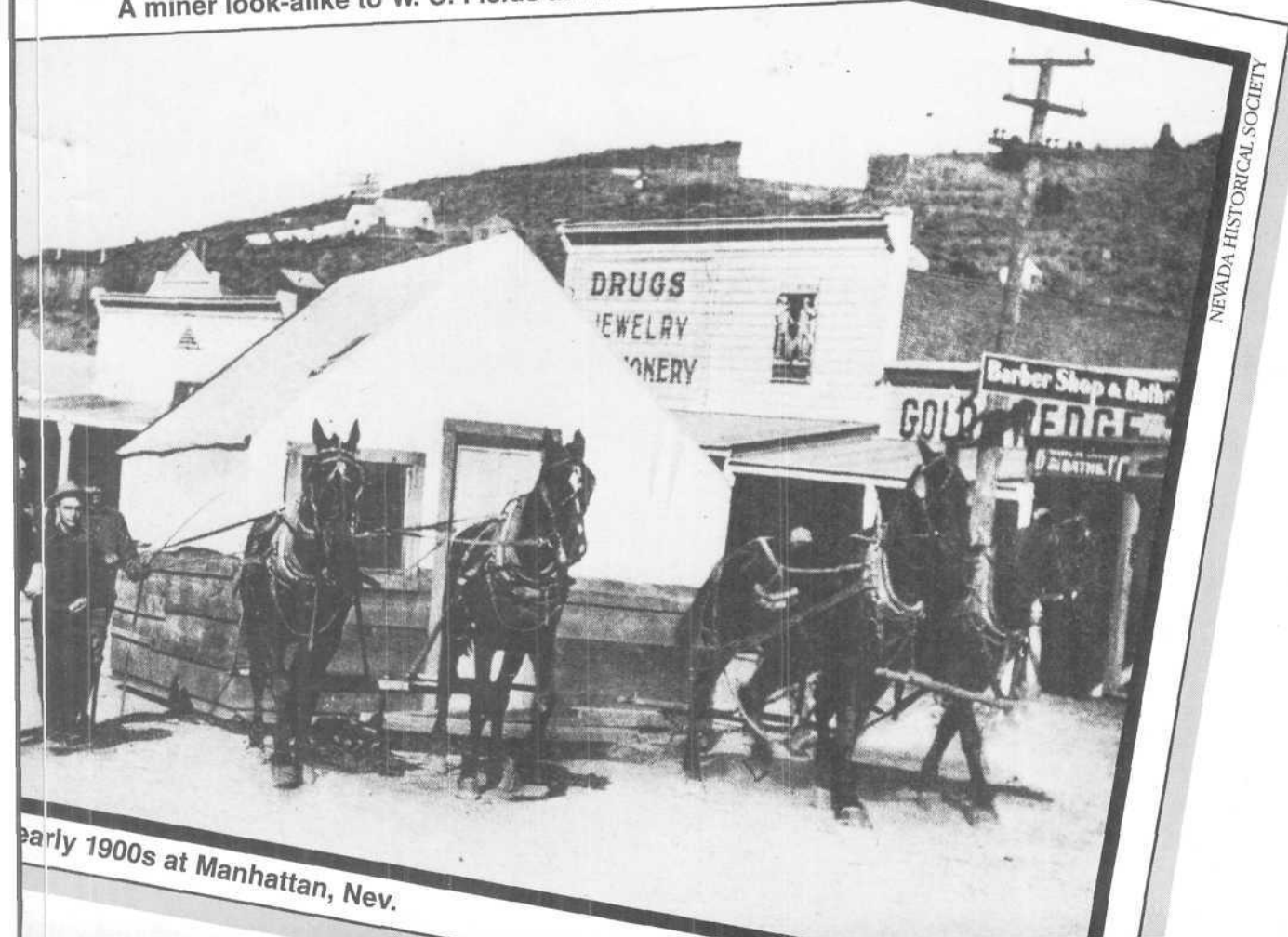
At least one ingenious sagebrush argonaut at Tonopah built a house out of oil cans.

Another prospector at Goldfield constructed his lodging place of dirt-filled wooden barrels.

But the homebuilder who came up with the idea of using the flotsam left behind by forty-rod drinkers (imbibers who could navigate at least forty rods distance before passing out) was perhaps the most ingenious of all. The bottle house was first built at Ryolite about 1905. It was later abandoned. However, in 1925 Paramount Pictures reconstructed the bottle house and used it in a film. It still exists.

A mini-version of the bottle house can be found at Silver Peak, a mining-spawned ghost town at the end of Highway 47 in central Esmeralda County. The bottle building has been generally covered over, but some bottles are still visible.

Nelson, Nevada squats about forty miles southeast of Las Vegas. Here yet another Nevada architecture oddity can be found in the form of a two-hole corrugated metal-covered outhouse. Much like other Sagebrush State shacks, it once served its utilitarian purpose, was ultimately abandoned, and today stands as yet another crumbling curiosity. **D**



NEVADA HISTORICAL SOCIETY

early 1900s at Manhattan, Nev.



# \$10 WILL GET YOU TWELVE

**That's just 83 $\frac{1}{3}$  cents a month to have the *Desert* delivered to your door for a whole year—\$8 off the regular newsstand price!**

**What's more**, each issue of *Desert* Magazine is unconditionally guaranteed to please you. We back this with our offer to refund the unused portion of your subscription, any time. You don't have to give a reason. There'll be no questions asked!

**Subscribe today.** Clip this handy coupon, enclose your check or ask us to bill you, and within approximately six weeks, our desert will come alive before your eyes—its heritage, lifestyles, and future—in the first of 12 action-packed, colorful issues written, photographed and edited for and by those who love America's most fascinating land. Put us into your mail today, won't you? Who knows, there might be an acre of desert just north of Zzyzx or over in Baja waiting for you to some day call your very own!



## ONE-YEAR SUBSCRIPTION TO DESERT MAGAZINE \$10.00

- ☐ RENEW MY PRESENT SUBSCRIPTION    ☐ ENTER A NEW SUBSCRIPTION
- ☐ One Year \$10.00    ☐ Two Years (Or Two 1 Year) \$19.00    Foreign subscribers add \$4.00/year postage
- ☐ ALSO SEND DESERT'S 12-ISSUE HANDSOME BROWN VINYL BINDER FOR \$6.00 (Add \$1.00 for postage and handling)
- ☐ Date Binder(s) with Year(s) 19\_\_\_\_, 19\_\_\_\_    ☐ Undated

☐ PAYMENT ENCLOSED    I enclose \$ \_\_\_\_\_    ☐ BILL ME  
(check, money order or cash)

MY CHARGE:



Credit Card No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MasterCharge  
Interbank No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Signature \_\_\_\_\_

(Charge not valid unless signed)

Expiration Date  
Month/Year

		/		
--	--	---	--	--

**DESERT MAGAZINE** P.O. Box 28816, San Diego 92128

SEND GIFT SUBSCRIPTION TO:

Name \_\_\_\_\_ Name \_\_\_\_\_

Address \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

# 4109

Sign Gift Card: "From \_\_\_\_\_"

THE CACTUS CITY

# Elarion

☆THE NOSIEST NEWSPAPER IN THE WEST☆

VOL. 1 NO. 8

MARY E. TWYMAN, EDITOR

SEPTEMBER 1980

## CACTI THREATENED BY COLLECTING BOOM

**San Francisco, Calif.** — A worldwide fascination with cacti is threatening many species with extinction. Reason: Cacti have charmed plant fanciers around the globe with their curious shapes, adaptations to a harsh environment and breathtaking flowers. The result is a worldwide market for all types of cacti, from the small spiny globes sold in supermarkets to the large or

extremely rare species which sell for hundreds of dollars in specialty shops. The drive to supply this market, or to dig one's own exotic plant from the desert, has put severe pressure on many species of cacti.

The exact volume of the global trade is unknown, but some preliminary data are available. During a twenty-month period from October, 1977 through May, 1979, the

United States imported more than 11 million cacti and succulents from more than sixty countries according to a recent study. Not surprisingly, most entered through towns on the U.S.-Mexican border, Miami and San Francisco. Official statistics showed exports of 9,000 cacti during the same period, but the actual volume was several times greater. In 1976 Great Britain alone imported

15,000 cacti from the U.S., and other countries such as Japan and West Germany are considered much larger markets for cactus than Britain.

The volume of the cactus trade within the U.S. can only be estimated since, for example, vast quantities of globular cacti were recorded by Arizona authorities as being shipped from Texas. In 1978, one dealer alone sent

(Cont. on page 32) ➤

## NEVADA CATTLEMEN PROTEST AIR FORCE MX POLICIES

**Tonopah, Nev.** — A Nevada Cattlemen's Association ranchers' MX committee met with the governor's staff here recently to discuss the Air Force's reluctance to carry out their promises to the livestock industry, governor's staff and Nevada's congressional representatives, a spokesman for the Association said.

At a luncheon meeting attended by Congressman Santini's staff, under-secretary of defense William Perry, other Air Force representatives, Tonopah Rotary Club members, miners and cattlemen, Nevada Cattlemen's Association public lands chairman

Wayne Hage read a letter which was a result of their meeting. Addressed to Santini, it said:

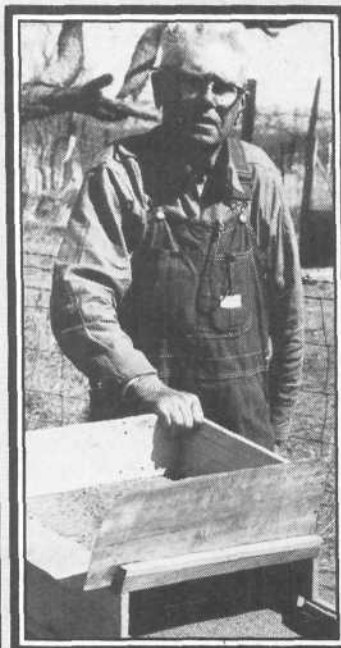
"When the MX issue first emerged in the state of Nevada, the Nevada Cattlemen's Association took a neutral position until the possible impacts of the missile project could be more accurately forecast.

"In numerous meetings with Air Force representatives the ranchers were assured the Air Force would make every effort necessary to minimize the impact of the MX on the ranching industry. The Air Force, through Gen. Guy Hecker, Forest

McCartney and others assured the ranchers they would replace lost grazing capacity, replace lost waters, and avoid taking private property to the greatest degree possible. They encourage the ranchers to involve themselves in the Environmental Impact Study development to assure adequate consideration of these issues.

"Approximately two months ago the ranchers met with representatives of the Air Force, governor's office and members of the congressional delegation to establish a position relative to the impact of the MX on the

(Cont. on page 32) ➤



Harry Crowder was sure there was gold at the bottom of Warsaw Canyon (see page 34).



**Cacti (Cont. from page 31)**  
shipments of between 60,000 and 95,000 plants to Arizona almost every month.

Cactus collecting is often wasteful and shortsighted; for example, some collectors systematically strip all cacti from an area, leaving no plants to reproduce. The more sophisticated collectors intentionally seek out rare species.

Collecting and storing techniques are also extremely wasteful. Plants are sometimes torn from the ground and left to wither in piles. Plants that survive this neglect may die as a result of improper care by the ultimate purchaser. The death of a large proportion of field-collected cacti not only means the loss of those plants, it also stimulates removal of even more cacti from the desert to replace those that have died in the collectors' markets.

The ecological impact of removing cacti may be severe. Many cacti, restricted to small ranges by special habitat requirements, are easily decimated by collectors who strip entire areas. One student of the trade believes that

ten species of cacti a year may be driven to extinction by commercial exploitation.

Even when a cactus species is widespread, over-collecting may threaten its survival in large parts of its range. The extinction process may be so gradual as not to be perceived. The giant saguaro, for example, requires 100 years to reach sexual maturity and then, its reproductive rate is low. While each cactus may produce 2.5 million seeds during its lifetime, an average of only seven survive to reproduce themselves. Since the seedlings thrive only in years of good rains, if all the saguaro plants of a certain size were removed, several years would be necessary for the species to renew its reproductive capacity. As the older cacti die out, there may not be young plants to replace them. The result is gradual extinction of this beautiful plant that is not only a symbol of the American desert, but also a source of food and shelter for most species of wildlife in its ecosystem.

Faith T. Campbell  
and Jan Tarr  
**NOT MAN APART**

## Flood-Ravaged Phoenix Demands Carter Quit Stalling on Orme Dam

**Phoenix, Ariz.** — Orme Dam, killed by President Carter as part of the Central Arizona Project because of demands by environmentalists, would have cut damages in the Phoenix area by February's floods from \$80 million to less than \$5 million, according to calculations by the Water and Power Resources Service. The peak flow of 180,000 cubic feet per second would have been reduced to 50,000 if the dam had been in place, WPRS said. Calling President Carter to reverse his position on building Orme Dam, the *Phoenix Gazette* said: "The people of Phoenix are part of the environment too; surely, the principle of the greatest good

for the greatest number still applies."

The *Arizona Republic* in just a couple of days got responses from more than 5,000 people when it asked them to sign and return a coupon reading: "I'm mad—mad as hell—that high-and-dry Washington bureaucrats have been dilly-dallying for at least ten years over approval of the Orme Dam, worrying more about nesting bald eagles than the lives and property and jobs of the people of Phoenix, who must endure floods. Now dammit, give us our dam!" The paper's editor, Pat Murphy, says he'll send the coupons to Washington.

**Desert News Service**

**Protest (Cont. from pg. 31)**  
ranching industry. Four basic points were agreed on:

1) There would be no net reduction in grazing capacity.

2) There would be no net reduction in available water.

3) Buy out or condemnation of ranchers' property rights would not be considered other than as an absolute last resort.

4) An independent and autonomous analysis of the MX impact on the ranching industry would be conducted.

"Attempts to implement a work plan to accomplish these objectives have been stalemated by the Air Force under severe pressure from the Bureau of Land Management.

"The BLM appears to be overly sensitive to any study of grazing that may expose errors or distortions that exist in their recent EIS on

grazing in the Caliente and Tonopah regions.

"The Air Force says it cannot risk offending its major cooperator in the MX affected area.

"The ranching industry feels it has been more than cooperative in dealing with a proposed project that threatens the existence of ranching industry in the project area. The action requested by ranchers is only what the Air Force originally promised to do.

"The Nevada Cattlemen's Association requests that you actively involve yourself in breaking the present impasse. Thank you."

**s/ Nevada Cattlemen's Association Ranchers MX Committee**

(Ed. note: see related story on page 38.)

**Tonopah TIMES-BONANZA and Goldfield NEWS**

## Gala Saloon Openings In Early Nevada



**Searchlight, Nev.** — In early-day Nevada, the prosperity of a mining camp was often measured by the number and quality of its saloons—the more the better. The booming camp of Searchlight in southern Nevada was no exception and by 1904, some 38 drinking establishments graced the community's main street. In a similar vein, the opening of a new saloon was usually marked by elaborate ceremonies, a free feed, drinks on the house and whatever entertainment or diversion the owners or the patrons could provide.

In May of 1904, Sam Barnes announced to the public that Sly's Saloon, "a new emporium of refreshment," would throw open its doors on the 21st of the month. Appropriate arrangements were made for food and drink, and the place was packed to capacity by early evening.

As the evening progressed, several patrons suggested that the middle of the bar-room floor be cleared for

some informal boxing and wrestling matches.

Guy E. Baker, a burly foreman of the Quartette mine, offered to take on all comers and a local assayer, W. W. Copp, accepted his challenge. The bareknuckle contest went three short rounds and ended with Copp being carried from the impromptu arena by his friends.

During the match, a prospector arrived with his mule, rode in the front door and dismounted. He immediately joined the cheering mob and left his animal to its own devices. Walking around the room, the mule spied the free lunch at the end of the bar, ambled over and quickly gobbled up every edible in sight. No notice was taken of the animal because Baker was involved in a wrestling match with S. R. Hopkins. A few minutes into the brawl, Baker threw his opponent across the room and broke his leg, thus bringing the evening's entertainment to an end.

**Nevada Historical Society**

# BLM SURVEYOR ORDERED OFF PRIVATE PROPERTY

**Needles, Calif.** — Joe McIntyre, a Needles-area property owner, ordered Jerrold E. Knight, representing himself as a cadastral surveyor, and his crew off private property. The surveyors were going down the north line of California sections 13 and 18, now located in Arizona, on the morning of June 3rd. The group was out of the Bureau of Land Management office in Phoenix.

McIntyre advised the surveyors, "I would appreciate it,

in fact make it a demand, that you not proceed south from those lines, or you could be considered in trespass on private property.

"I also informed them that I would immediately call the Mohave County Sheriff's office, to record my protest of any possible trespass."

Knight told McIntyre that they were there on the orders of Mr. William Lawrence, executive director of the Fort Mohave Tribe, and a non-Indian, for possible litigation

with a Mr. Newman.

McIntyre continued, "I told them I didn't care about Mr. Lawrence or Mr. Newman, or the Bureau of Land Management, but I didn't want them trespassing on land that I own for any purpose, and I felt they had no business on other private parcels either."

McIntyre added, "I did call the Sheriff's Department in Kingman, and that office said a deputy would be sent to record my protest."

McIntyre concluded, "We exchanged identification. Everything was on a friendly basis."

**Needles DESERT STAR**

## UNR TESTS FAVOR DRIP IRRIGATION

**Reno, Nev.** — Initial results of drip irrigation studies in Nevada by the College of Agriculture, University of Nevada at Reno, offer encouragement, says the scientist heading the effort.

Dr. Joseph E. Howland, project coordinator for the College, pointed out that one acre of land in Pahrump, Nye County, and a similar acre in Moapa Valley, Clark County, were planted with vegetables last fall and were irrigated with drip systems. Problems arose at Pahrump but the Moapa vegetables were harvested in late December. "Our initial attempts have been encouraging," Dr. Howland said, "and drip irrigation appears to work well for Nevada soils and climates."

The objectives of the research, according to Dr. Howland, are to study the economic feasibility of drip irrigation in Nevada for specialty horticultural crops and to test-market these crops for acceptability by consumers. Also a part of the work is

to determine how drip irrigation systems might be adapted to Nevada conditions.

"Among advantages of drip irrigation," Dr. Howland said, "which have led to the experiments is that both water and energy can be saved. Right now these are important considerations in production of food. Further, the drip systems lend themselves to greater success where either soil or the water is of poorer quality."

Water, using drip systems, is delivered under low pressure to individual plants via plastic tubes, or tape. Emitters are installed at each water site and "drip" or emit water very slowly. Once the site is saturated, the system can keep the soils around the plant constantly moist with relatively little water. Thus, water use is more efficient, and energy using leveling required in other systems is not necessary.

**Eureka SENTINAL**

## BUREAUCRATS CUT A VISIT SHORT

**Tombstone, Ariz.** — When a couple of bureaucratic types from Arizona's Workman's Compensation Fund came calling on a new small mining development recently, they became entangled in their own red tape. The way we heard it, they rode in the operation superintendent's vehicle past all sorts of "Warning," "Hard Hat Area" and like signs, and then were about to climb out and start inspecting when their chauff-

feur stopped them with "Whoa, now. You can't go out there without the proper safety equipment — namely hard hats and safety shoes." The dumbfounded bureaucrats protested but the "super" stood on their rules. He offered to drive them anywhere they wanted to go on the property but they could not get out of the truck. Their visit was short.

**Western PROSPECTOR & MINER**

## MOTOWN EXPERTS DOUBT 85-MPG CAR

**Detroit, Mich.** — The government is considering a program that would require cars to average 85 miles per gallon in 1995, which would be four times today's average and triple the Federal requirement for 1985.

"There is no technology available which would permit that type of mileage for something which would be considered an automobile," said an official of the Motor Vehicle Manufacturers Association.

He pointed out that today's commuter-size motorcycles get from 50 to 75 miles per gallon.

"So how could the government in its infinite wisdom conceive of an enclosed car for even two passengers getting better mileage than a motorcycle?"

Addressing the 1995 proposal, one cartoonist showed a driver lying on his stomach on a three-wheeler to reduce wind resistance. He was protected only by a plastic shield.

Another cartoon showed a putt-putt engine on a wagon, with an auxiliary bicycle chain-drive.

Still another showed a family of four going off on a trip. Each had his or her own single-seat vehicle, linked by CBs for conversation.

The Automotive Information Council points out that several downsizing programs already have been completed and that by 1985, when each car manufacturer's average must be 27.5 miles per gal-

lon, another full new generation of cars will be in production. The industry's cost between now and then will be about \$80 billion, equal to the cost of the program which put the first American on the moon.

To meet the 27.5 mpg standard, many car companies will be marketing two-passenger cars, while four-cylinder engines will be used to further reduce weight.

**Desert News Service**



# GOLD! IT'S NOT ALWAYS WHERE YOU THINK IT SHOULD BE



*Inventor Crowder stands by his combination wet and dry washer.*

by Wayne Winters

**Tombstone, Ariz.** — Most everyone is familiar with the old saying, "Gold is where you find it!" In fact, it doesn't require any genius to recognize the truth of that wheeze. It's a lead-pipe cinch if there ever was one.

There's another side to this coin, though. If this pencil pusher was inclined to make a try for immortality (not immorality), he'd coin a phrase that would go something like this:

*"It's true that gold is where you find it, but it's also mighty certain that more often than not, gold isn't where you think you'll find it."*

Anyone who has ever rocked a cradle, cleaned up a sluice or swished a pan will rally to the support of that last statement. Indeed, proclaimed often and shouted loudly enough, a fellow could become accepted as the philosopher of the placer goldmen with that witticism.

Proof of this pudding was born out about twenty years ago when Harry Crowder, the old prospector of Smugglers'

Gulch, approached me about a deep pocket in a stream bed that he felt was a natural "nugget trap" if there ever was such a thing. We talked about the prospect of cleaning out the hole many an evening after the day's work was done and Harry had washed his dishes following an evening meal in the little 'dobe cabin (He used to say it was so small that a feller couldn't cuss a cat in it without getting a mouthful of hair) he was batching in on the Black Diamond claim down California Gulch about a mile north of the Sonora border.

Before going on into details of this yarn about the nugget trap, it wouldn't be a bit amiss to illuminate our readers on the sort of fellow old Harry was — and still is. Crowder came kickin' and squallin' into this world somewhere in the midwest if my memory serves me rightly. Seems it was Missouri, Iowa or Illinois, although it might have been Nebraska. I do remember one thing for certain and that is

the year was 1890, and the month October. (He'll be ninety come next fall.) But a little tad when his Pappy decided to strike out for points farther west, boy and man wandered through Nebraska when it was still being settled. His Dad served as postmaster, ran stores, etc., in the new camps as the railroads opened up the country, but in between times they found a few years to work as packers and freighters in Wyoming, Colorado and some of the other mountain states. Oklahoma and the Indian Territory were part of their stomping ground and the boy growing into maturity saw the elephant and heard the owl along with his contemporaries at the turn of the century.

Freighting and packing mining supplies into remote camps was part of his early

life and it was thusly that Harry became interested in mines. Mining gold, particularly in placer, has held a fascination for him ever since the first time as a youngster that he saw a comet tail of colors in a pan on Clear Creek, west of Denver.

Years went by and times and people changed. Crowder wandered eastward, served in the Army in World War I, worked in Omaha then on to Illinois, where he spent most of his adult years. Finally reaching retirement age, he again turned his face to the setting sun and followed it into the west that he'd known as a boy. Arizona became home, and the lure of gold in placer, still strong in his blood, coaxed the self-sufficient retiree to Santa Cruz County in general, Smuggler's (California) Gulch in particular.



*Everything was lowered several hundred feet down the steep canyon wall.*

Crowder is about as capable of handling himself in that wild and lonely country — a place where every living thing has either claws, fangs, teeth or thorns — as anyone who ever inhabited the area (smugglers, bandits, Indians, miners, soldiers, ranchers and treasure hunters included). For days and weeks and months he prospected, panned, washed and recovered gold. Maybe not a whole lot, but the pan without color was rare. Indeed, he seemed to have the same natural ability to locate the precious yellow stuff that the Mexican does for veins of silver. Uncanny! Supernatural, maybe! Or perhaps just a gift.

Getting back to the beginning of this yarn, Crowder had located a deep pothole, washed out of solid bedrock in the bottom of Warsaw Canyon. The walls were very steep and studded with cactus; the place was fairly remote from even any of the old wagon trails, and worst of all, the rock was, for the most part smooth. Some rope work would be required if we were to take in the equipment needed to clean out the pocket.

We first got to discussing the spot in early spring. I was headquartering at the Doran's Folly claim, digging from bedrock and washing either in a rocker or a squaw sluice, while Crowder, camped a half-mile away at the Black Diamond had three or four projects going at the same time (once he even dug a well about 25 feet deep and washed every shovelful of gravel, recovering considerable gold in the process). It was natural that we'd often sit around in the evening and chin about events of the day and dreams of the future.

It was mid-summer when we finally got around to making our play at the place we'd come to call the "Nugget Trap." Enlisting the help of a young Tucson husky, Bob Linton, we hauled in equipment — a couple of gas-powered pumps, lots of plastic pipe and a couple of lengths of sluice box and Long Tom hoppers. Herman Feidler made a small jet tube for me, and after a couple of

days of rassin' the stuff down the canyon side, mainly via rope, we were ready to fire everything up and start sucking out water and gravel from the place that "just had to have pounds and pounds of coarse gold buried under all that loose rock."

Time has erased memory of the exact dimensions of the hole in which we went to work, but it must have been about eight or ten feet wide and probably twice that long. A trickle of water flowed into it from a fall above, perhaps another fifteen to twenty feet high. The summer rains had not yet started and there was but little flow in the canyon. We were in a hurry to complete the job, for not only could we envision the golden treasure that awaited us in the bottom but once we began the job, we didn't want it to be washed full of gravel again once the stream began running.

Sluices set up, hoppers at the head, a pump was fired up, suction started in the jet tube and we went to sucking gravel. Soon it became evident that the little inch-and-a-half jet was far too small to handle the large amount of material we wanted moved, so Linton and I spelled each other shoveling while Crowder manned the suction device. We got an awful lot of water and rock out this way before the setting sun warned us to scramble up the canyon wall while any light remained.

Next day we were back bright and early. We had to finish the chore that day as Linton and I were due back at work on a Tucson newspaper the following afternoon. Everything went well and there was only a small puddle remaining in the center of the now empty hole when time came for us to start hauling out the pumps, hose, pipe sluices, Long Toms, etc. Sad to say, the sluice cleanup showed not a single color of gold. This didn't particularly dismay us for we realized that the goodies were certain to be found in what was perhaps a washtub full of fine sand and gravel still on the solid rock bottom (it was polished smooth as a bald man's skull, by the running of water and

rock over the centuries that had gone before).

It was a struggle to cart all of the gear back up the canyon side in the fading light. Tired, wet, hungry, we finally had the equipment all loaded in the vehicles and then dropped back down to the hole once more where Harry was busy with his gold pan, hoping to at least have an idea what the bottom was going to show, before head-

ing for Tucson (Crowder was going to finish the job the next day). Ole Harry was squatting over that little puddle of water in the half light, swirling a sixteen-inch pan back and forth when he let out a yell. Linton and I jumped to our feet, expecting to see our compadre come up with a walnut-sized nugget between thumb and forefinger.

Guess what? He put his hand in the still brimful pan and lifted out not a nugget, but a wriggling, squirming, eight-inch catfish!

Crowder, probably happier at the prospect of a fish dinner than he would have been with a handful of nuggets, took out a shoelace and made a stringer, and then we climbed out of the canyon and wended our weary and separate ways homeward.

Next day, belly full of catfish (an old dam put in by earlyday miners on up Warsaw Canyon had once been stocked with fish and this one evidently had been washed downstream in some cloudburst) and accompanied by another compadre, the late Klondike McGowan, Harry went down and finished cleaning out the hole. Not a single color of gold was found in the entire operation, although gold can be panned in the grassroots and on the bars both immediately above and below the spot we mistakenly called a "nugget trap."

To this day Crowder and I still think that the place should have held a bonanza. We've chewed over the pros and cons of the deal so many times that the subject is worn threadbare. Now we've given up on the whys and wherefores, agreeing on only one thing — there was no gold in a place where we sure thought there would be. My belief is that at times, such a torrent of water rushes through this pothole that it scours out every single pebble. Harry has quit opining anything on the subject.

He, however, lays claim to fame of a sort. He says he's the only man in Arizona who has panned a catfish.

And that's something!  
— WESTERN PROSPECTOR & MINER



Jet tube brought up many yards of gravel but no gold.



# THE DESERT ROCKHOUND



by Rick Mitchell

## Collecting Sites Update:

All of the roads into the once popular Owlshead Mountains collecting locations, just south of Death Valley, have been closed by the Monument's administration. This area is famous for the beautiful smoky quartz crystals that can be found throughout the southern slopes. The reason for the closure is "to preserve the scenic beauty." It is difficult to understand why they so restrict an area, to preserve the natural beauty, and thereby prevent most people from ever being able to see it. In any event, even though the collecting spot is *outside* the Monument boundaries, you must hike there, and it is not an easy four-mile trek.

Interesting sand concretions can be picked up in the desert approximately thirteen miles west of El Centro, California. To get there, take the Dunaway Road exit from Interstate 8, go one-tenth of a mile south, and then take the relatively good dirt road heading west. It's sandy in a few spots, but should be passable by most vehicles. When you've traveled about a mile from Dunaway Road, you've reached the start of the collecting area. It is quite vast, extending west and south for at least two miles in each direction. The concretions are lying on the ground, but it takes a little searching to find the perfect, geometric ones. Some are huge, looking like bowling balls or dumbbells, while others are quite small. There is a wide range of configurations and sizes: they occur in symmetric shapes as well as random, weathered pieces, which are often so unusual that they are even more of a prize.

**Ironwood:** For years rockhounds and other desert visitors have been picking up pieces of ironwood. It is well known for its hardness and

sheen, and can be worked into beautiful carvings, display stands and even furniture. According to the Bureau of Land Management, though, it is against the law to remove any native plants from the desert, and that includes ironwood. In California there's a \$500 fine for taking it, whether alive or dead. So, the next time you are tempted to throw a few pieces into your vehicle, it is advisable that you don't. It could be very expensive if you're caught.

**Shows:** The Pleasant Oaks Gem and Mineral Club of Dallas, Texas, will be holding their thirteenth annual show. The dates are September 13 through September 14 and it will be at the Holiday Inn Central, 4070 N. Central Expressway, in Dallas, Texas.

Another Texas show will take place in Lubbock at the South Plains Fair, between September 20 and September 27. It is the annual event sponsored by the Lubbock Gem and Mineral Society and certainly will aid in making the Fair an outstanding event.

**Helpful Hints:** When using a flat lapping machine, have you ever been unsure if what you are polishing is ready for the next grit? It is essential not to place it in the finer grind or polish until completely worked in the previous stage. An article in the San Jacinto Rockhounds Newsletter suggests using a large felt or nylon tip, permanent ink, marking pen to draw a close, checkerboard design all over the surface being ground. Then, when these markings are completely removed, the stone should be ready to go onto the next finer grind or polish.

The Oil Belt Rockhounds offer a suggestion on how to tell the difference between nickel and chrome platings.

Simply breathe on the piece in question. If the moisture from your breath leaves an iridescence, it is nickel and if it doesn't, it will be chrome.

You can make your own jewelry cleaner, and the cost is only pennies. It works as well as just about any you can purchase commercially, and will clean gold, silver, copper and a number of other metals. To make this "magic" solution, as described in the Sacramento Digger's Newsletter, combine 1/4 cup of white vinegar, 1/4 cup of household ammonia and a small amount of liquid detergent. Mix this solution well and then dunk the objects to be cleaned into it. Stir with a silver fork for about three minutes, wash under the hot water faucet and then allow the pieces to dry on a towel. All of the dark tarnish will be gone. The solution doesn't keep, however, so if possible, try to do more than one item at a time.

**New Publications:** An excellent map of the United States, showing virtually every county where gold has been found in appreciable quantities, is available from The Gold Bug, P.O. Box 588, Alamo, CA 94507. In addition to showing the various locations where this precious metal may be found, it also lists suppliers of equipment and additional interesting information.

**California is Stretching:** According to the National Aeronautics and Space Administration, the land surface of Southern California is increasing. In seven months, it stretched eight inches between two NASA laboratories, approximately 100 miles apart. The discovery was made when NASA scientists were comparing signal arrivals related to radio noise from distant quasars. This expansion is admittedly puzzling, and there are as many

theories being formed as to why as there are scientists in the lab. The discovery may be invaluable in predicting earthquakes.

**Gem Tour:** Bramer Tours, 6777 Hollywood Blvd., Suite 406, Los Angeles, CA 90028, will be offering a tour of the gem and mineral sites of Brazil. It will depart October 4th and participants will visit many of the world-famous gem locations in the Brazilian state of Minas Gerais. Lectures, film presentations and a mini-gemological course will supplement actual visits to the mines. There also will be a special extension to the basic tour, available at an additional cost of \$420, which will include an extensive seminar dealing with many aspects of gemstones, with emphasis on information for those in the business. The basic tour is \$1,195, land portion, and lasts fifteen days. It promises to be an excellent trip for anybody with an interest in precious stones and a desire to visit one of the most famous locations in the entire world.

**Mine Tours:** The Inspiration Consolidated Copper Company, in Miami, Arizona, will continue their daily tours, Monday through Friday, commencing in September. The tentative plan is to start at the visitor center at 9:00 A.M. each morning. For more information, contact the mine office, (602) 473-2411.

The Morenci Mine, owned by Phelps Dodge Corporation, also offers tours of their facility. They are by advance reservation only, through the mine manager at (602) 856-3772. If you are unable to make reservations, be sure to visit anyway. There is a viewpoint and a recorded program at the mine's edge, and this is open seven days a week, 24 hours a day.

# DESERT CALENDAR

Listing for Calendar must be received at least three months prior to the event. There is no charge for this service.

**Sept. 6 and 7:** Nature's Crown Jewels, gem and mineral show at Larwin Community Center, 1692 Sycamore Dr., Simi Valley, Calif. Hours are Sept. 6 from 10:00 a.m. to 9:00 p.m. and Sept. 7 from 10:00 a.m. to 5:00 p.m. Sponsored by Simi Valley Gem and Mineral Society. For further information contact Dick or Dorothy Blair, P.O. Box 3571, Simi Valley, CA 93063.

**October 4-5:** Manufacturers and exhibitors, along with visitors from out of state should make plans now for the 13th Annual National Prospectors and Treasure Hunters Convention at Follows Camp, Azusa, Calif. This location is 30 miles east of Los Angeles off I-10 or U.S.-66. Rig and Table displays are free on a first-come basis, with advance reservations required. Contact Jean Glick, Chmn., 21106 S. Denker Ave., Torrance, CA 90501. (213) 320-5061.

**Oct. 18-19:** Santa Barbara Mineral and Gem Society's 22nd Annual Show, "Fiesta of Gems," at Earl Warren Showgrounds, Calle Real and Las Positas Rd. Hours: Saturday 10 a.m. to 7 p.m., Sunday 10 a.m. to 5 p.m. Santa Barbara, Calif. Floy Myers, Show Coordinator.

**Nov. 1-2:** Annual "Wonderful Weekend in Twentynine Palms," in Twentynine Palms, Calif., at the Junior High School on Utah Trail, and the Art Gallery on Cottonwood Drive. Combines Gem and Mineral Show, Weed and Flower Show, Smorgasbord, Art Show, and other activities. Free admission to exhibits and free parking. For further information contact Twentynine Palms Garden Club, P.O. Box 934, Twentynine Palms, CA 92277.

**Nov. 1-2:** Beach Cities Gem, Mineral and Fossil Society, 5th annual "Galaxy of Gems" show, Sat. and Sun., Nov. 1st and 2nd. Interesting exhibits by club members, guest exhibitors, and dealers. Delicious food and beverages available, also a country store featuring interesting items for your holiday gift giving. Admission free and ample free parking. The show will be held at Clark Stadium, 861 Valley Dr., Hermosa Beach, Calif. Hours are Sat., 10 a.m. to 8 p.m. and Sun., 10 a.m. to 5 p.m. Contact Curt Thompson, Chmn., 2431 Valley Dr., Hermosa Beach, CA 90254. (213) 374-8355.

## Monthly Photo Contest Rules

**E**ach month when entries warrant, **DESERT Magazine** will award \$25 for the best black and white photograph submitted. Subject must be desert-related. In the opinion of our judges, none of the entries received by the deadline for our Sept. contest qualified for an award so no prize will be awarded this month. Prize money will be added to next month's winnings, a total of \$50 for the lucky winner.

### Here Are The Rules

1. Prints must be B&W, 8x10, glossy.
2. Contest is open to amateur and professional. **DESERT** requires first publication rights.
3. Each photograph must be labeled (time, place, shutter speed, film, and camera).
4. Judges are from **DESERT's** staff.
5. Prints will be returned if self-addressed stamped envelope is enclosed.

Address all entries to Photo Editor, **DESERT Magazine**, P.O. Box 1318, Palm Desert, CA 92261.

Colleges shouldn't have to choose between lighting their buildings and enlightening their students.

—Thomas Edison  
Inventor

Today, colleges all across America are being hurt by inflation.

So please give generously to the college of your choice. The money you give will make everyone's future brighter.

**Help! Give to the college of your choice.**

Council for Financial Aid to Education, Inc. 680 Fifth Avenue, New York, N.Y. 10019 **CE Ad Fund** A public service of this magazine and The Advertising Council

## LIFETIME OF MEMORIES PACK THE GRAND CANYON SOUTH RIM • NORTH RIM SUPAI WATERFALLS

WE TELL YOU HOW TO MAKE THE ARRANGEMENTS TO SEE IT ALL. WE SEND MAPS, PHOTOS, TIPS, WHAT TO, AND WHAT NOT TO TAKE PLUS INFO ON BEST TIMES TO GO FOR 8 X 11 BOOKLET SEND...

\$2.95

**B.EXUM**  
PHOTO • ARTS

P.O. BOX 6527, ORANGE, CALIF. 92667

## READ ABOUT TODAY'S GOLD RUSH

Articles and news items about prospecting, mines and mining, both large and small operations. Pictures, hints, tips, advertisements for machinery, mines and claims. Published monthly. \$5.00 per year. Send for sample copy.

**Western PROSPECTOR & MINER**  
Dept. D  
Box 146, Tombstone, AZ 85638



## JUST FOR YOU!

Expeditions from Sierras to Nevada,  
Death Valley to Mt. Whitney

- Bonded Guides
- 4WDs.
- Camping
- Hiking
- Fishing
- Photography
- Geology
- Wildflowers

You name it, We'll do the rest.  
DEPT. D

P.O. BOX 2005 Ridgecrest, Calif. 93555  
(714) 375-1004

this  
publication is  
available in  
microform



Please send me additional information.

**University Microfilms  
International**

300 North Zeeb Road  
Dept. P.R.  
Ann Arbor, MI 48106  
U.S.A.

18 Bedford Row  
Dept. P.R.  
London, WC1R 4EJ  
England

Name \_\_\_\_\_  
Institution \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_



# CONGRESS SOURING ON MX MISSILE

**Washington, D.C.** — The Air Force and the Carter Administration are doggedly pursuing the MX "racetrack" system, which threatens to spread missile shelters and roadways over large areas of Nevada and Utah, and cost at least \$33 billion in 1980 dollars.

Local opposition in Nevada and Utah is becoming intense as a result of a dramatic shift in public opinion over the last year. Air Force hear-

ings this winter for an environmental impact statement were swamped with anti-MX sentiment.

In Washington, many in Congress and out are increasingly skeptical that the MX system will actually work—that it will protect U.S. missiles as it is designed to do. Without a SALT treaty, the Soviet Union could build as many warheads as it needed to overwhelm the MX system.

In addition, there is considerable doubt, as pointed out in a recent General Accounting Office report, that the Air Force can effectively hide the huge missiles and their million-pound transporters, while still frequently moving them from shelter to shelter, and while still allowing the public into the deployment area as it has promised to do.

Despite such doubts, the Pentagon and the Adminis-

tration are unlikely to back away from the MX, in part because this is an election year, and in part because of a perceived lack of alternatives. The Air Force, having lost the B-1 bomber fight several years ago, and gradually losing its nuclear preeminence to the Navy, appears ready to make a determined stand on the MX.

**Steve Wheeler  
NOT MAN APART**

## NAVAJO TO SUFFER WITHOUT THEIR SHEEP, PROFESSOR CHARGES

**Flagstaff, Ariz.** — Livestock reduction programs mandated by Congress as part of legislation calling for the eviction of some 6,000 Navajo Indians from their Arizona reservation have resulted in "wide-spread depression, hunger and economic devastation," according to Dr. John J. Wood, an associate professor of anthropology at Northern Arizona University.

In a recent speech before the Society for Applied Anthropology, Dr. Wood described the forced livestock reduction program as a human tragedy because of "legislative shortsightedness and lack of understanding" of the role livestock plays in the local economy of the Navajo.

"Most livestock operations

among Navajo people are not commercial ventures," Wood declared. "Livestock herds are like a savings account from which withdrawals are made periodically to add meat to the family diet; to feed children and grandchildren and other relatives in the extended family; and, to help provide food for religious ceremonies," Wood went on to explain.

Noting that Congress mandated a 90 percent reduction in livestock holdings among Navajo slated for relocation, Wood declared: "It is not surprising that a sheep reduction program that has no mitigating measures except for a one-time cash payment could result in such suffering and disruption to

the traditional lifestyles of the Navajo."

Wood added, "Let's hope that the failure of Congress to understand the consequences of its actions is due to oversight and ignorance and not a purposeful re-enactment of Kit Carson's scorched-earth policy of the 1860s."

Wood was referring to an episode in 1863, when the famed Kit Carson rounded up 8,500 Navajos living in Arizona, burned their crops, killed off their livestock and forced them to walk to captivity at Fort Sumner in eastern New Mexico.

Wood was also critical of the entire relocation plan, and said Congress and federal officials were unconcerned about isolating Navajo relocatees from their sacred places such as Big Mountain

in Arizona.

"Land use, social organization, and religious beliefs and practices among the Navajo are closely interwoven," Wood said, and added, "depriving the Navajo right of access to their religious areas constitutes a violation of religious freedom as guaranteed by the Constitution, the Bill of Rights, and state and tribal constitutions."

Wood concluded: "These sacred places—places mentioned in Navajo legends; places where something supernatural has happened; sites where herbs, minerals and waters of healing powers are taken, and where people communicate with sacred powers by prayer and offerings—are part of the Navajo's definition of occupancy."

**Desert News Service**

## CHRYSLER QUILTS MOTORHOME MANUFACTURE

**Detroit, Mich.** — Chrysler Corporation has decided to quit manufacture of large (Class A) motorhome chassis.

The announcement came in mid-May, just as the selling season for completed vehicles of this type was due to start. According to company officials, sales to body builders and in turn, their sales to customers, had dropped to where it was no longer economical to produce these chassis.

Chrysler just a few years ago commanded 90 percent of this market as well as a significant business in medium-duty trucks from which the motorhome chassis are derived. All but pickup truck production was stopped a year ago.

Chrysler spokesmen promised that parts support for existing units with an inventory of over 3,000 numbers would be continued indefinitely. **Desert News Service**

## How To Care For Your Opal Jewelry

**Palm Desert, Calif.** — The opal is a fragile stone that can be damaged by extremes in temperature. Extreme cold can crack the stone or shrink it. Check the setting whenever you think the stone has gotten too chilly. You should not wear your opal ring in direct, hot sunlight, either, as that can crack it too. Don't

wear your opal around hot dishwater or while handling frozen food. Opals are absorbent. If you expose them to dye or dirt, they may absorb impurities and be ruined. They are soft stones so they scratch easily, and they contain water.

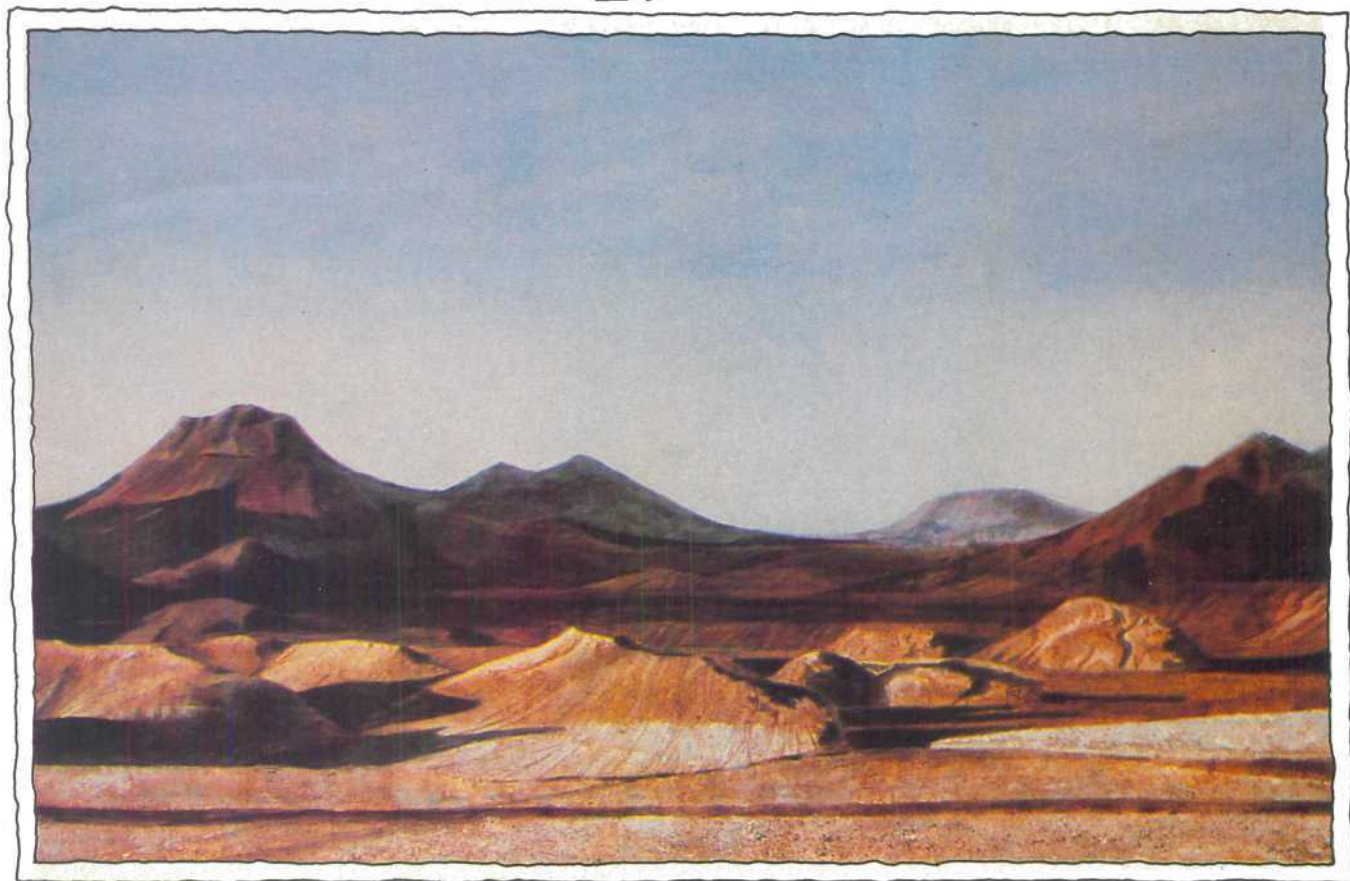
**GRAVEL GAZETTE**

# THE LAND OF WHITE SHADOWS

**Paintings and Text by BRUCE B. PIERCE**

**W**HEN ONE THINKS of painting the desert, there is only one — Death Valley. And it is anything but dead. It's alive, it's there, it's waiting to be painted.

**CHANGING SHADOW** — Natural minerals that form an intensity after a light rain. This painting breaks 'classic' rules. The darks and lights are in the middle ground.



**WHITE SHADOWS** — Blank white salt sand formed with time and water to produce a mixture almost like cement. The subtle difference between earth and sky.



*"These mountains are America's babies. The good Lord had little left to dress 'em up with after he finished the world."*

I didn't catch the name of the old timer who spoke those words as he watched me paint, but I later found out that he's right. The Valley, give or take a few metamorphic rocks laying around, is only 600 million years old, born in the precambrian dawn, a child by the geological time clock. Precambrian rocks can be seen on the southwest side of the Black Mountains, close to the highway at Badwater.

Death Valley's formative years were anything but calm. Radical earth movements, uplifts, folding, bending and fracturing have switched, crossed and transversed the Valley's orderliness.

A comparison can be made with the Grand Canyon, where there is order. Rock for rock, even strata lie one on top of the other like neat pages in a handsomely bound book. Page one is followed by page two. However, in Death Valley the comparison can be made with a loose leaf book; page ten is before page two, the beginning on top of the middle. The Grand Canyon lies on the stable shelf of North America whereas Death Valley lies on the edge where, as all Californians know, the action is.

After years of trying to peg the location of his "secret mine," Death Valley Scotty was heard to comment, "I tried and couldn't find it because the land marks have changed." Well, one thing is true, the Valley is ever changing; winds of sandblasting force, slides, erosion, the sizzling heat and extreme cold crack the rocks. The child is still growing. What the artist paints today may be gone tomorrow.

During the time of Christ, the Valley had a lake thirty feet deep. The shore line is still visible in some places, like a ring around a bathtub. But what one should look for are the "beach bars;" one is two miles north of Beatty Junction, 120 feet above sea level and 100 miles from today's nearest big blue-water lake, Lake Isabella.

Is it important to see the difference between lake gravel and lava rock? No, but trying to understand the why, how, and knowing where things are adds a lot more to the seeing and understanding.

**T**HE NEXT STEP is using this knowledge and translating it into a painting. Once while with my brother, a geologist, I pointed to a formation that would lend itself to a good picture. "Do you *see* that, do you know what that is?" he asked, and explained that I was looking at horizontal precambrian plates, pumped up by incomprehensible forces and made vertical. You can see them for yourself at Gelena Canyon. Taking in Death Valley is seeing; you don't have to know the names of what is out there. But knowing what it is and how it got there can only add to the drama.

This Valley is a special desert to artists. When Cennini laid down the rules of perspective and distance in the Renaissance, rules still followed by realists today, he did not see Death Valley. "Put your darks in the background and lights in the foreground," he said. This principle is generally true, but he didn't see the Black Mountains like giant stains on the earth, or the dark, blood red, distant Furnace Creek formation at sunset, where the light is in the background and the darks in the foreground. Photographers also have a problem in trying to capture the feeling of distance; they can't change perspective or add a little blue to distant forms.

There is another person the desert painter can learn from — the prospector. Some say he's got to be three-quarters geologist, one-fifth mule, and one-fifth artist. He most likely doesn't put anything down on paper, but he can spot color. He'll tell you to look in the morning or late afternoon. That's when things glitter and stand out because of the long shadows.

A reminder of past prospectors in Death Valley is the burros they left behind. These animals thrive in the Valley. They are hams at posing for paintings. I found a lot of models in Emigrant Canyon by Pinto Creek. Other animals also living in the Valley include big horn sheep, a desert survivor, and the coyotes, difficult to see but easily heard by their haunting cries at night. Snakes and other crawling varmints prefer the higher fans.

**I**F YOU WANT to add plants to your painting, there are 650 different species in the Valley, from the salt-loving desert holly which grows below sea level to the bristlecone pine, also known as foxtail pine, growing on Telescope Peak. The average precipitation is a minuscule 1.5 inches per year. That's enough to keep alive the salt grass, arrowweed (Devil's Cornfield), burroweed (Furnace Creek Wash) and the mesquite. But due to an increase in salt deposits these plants are slowly giving way to the more salt-tolerant species.

An unusual beauty mark of Death Valley is the Salt Pan as seen from Dante's View. Crusted salt in yellow-whites and blue-whites make a pattern of brine that lends itself to a beautiful natural perspective. Just north of the Salt Pan is another typical feature of the desert — the sand dunes at Mesquite Flat. But, try to paint them in one day; by tomorrow they'll have changed their shape with the warm evening winds.

Unlike most other deserts, blow sand is a rarity in Death Valley. The salt found naturally on the valley floor binds with the sand, making a cement that leaves a crusty surface.

And always in the background the Panamint Mountains, rising 11,049 feet, looking even more impressive because they rise up from the valley floor, below sea level. This mountain range was named by Dr. Darwin French in 1860 after the

Indians he found living there.

These same mountains were seen from the east by the fate-plagued 49er's, California-bound with their 27 wagons. They misread the Panamints for the lofty Sierra Nevadas. Both are snow covered long after winter is over. The 49er's paid a price for their blunder, but in doing so gave us a new name. One woman of the group after being rescued looked back on the alkali hellhole that brought so much hardship, and managed to say through parched lips, "Good bye, death valley." Or so goes the legend.

You can still paint that very spot. It is across from Cottonwood Springs in Emigrant Pass. The Amargosa Range rises across the white sink as a grand background. And, just under foot, you'll be standing over the still haunting silver secret which grows bigger each year, the lost "gunsight" lode. It is said that one of the emigrant pioneers in his haste to get out of the valley, tore off his gunsight. Finding some soft, greenish metal, he fashioned a temporary one. Later, his "new" sight was found to be hard silver. The only problem was, he forgot where he found the rock!

Looking for silver was new to the West then. As new as desert painting is today. Strange, if you consider art history, few painters and paintings are devoted to the desert. I found none in the large European art museums, which is curious, if you consider that our heritage sprang from the dry lands between the Nile and the Tigris Rivers.

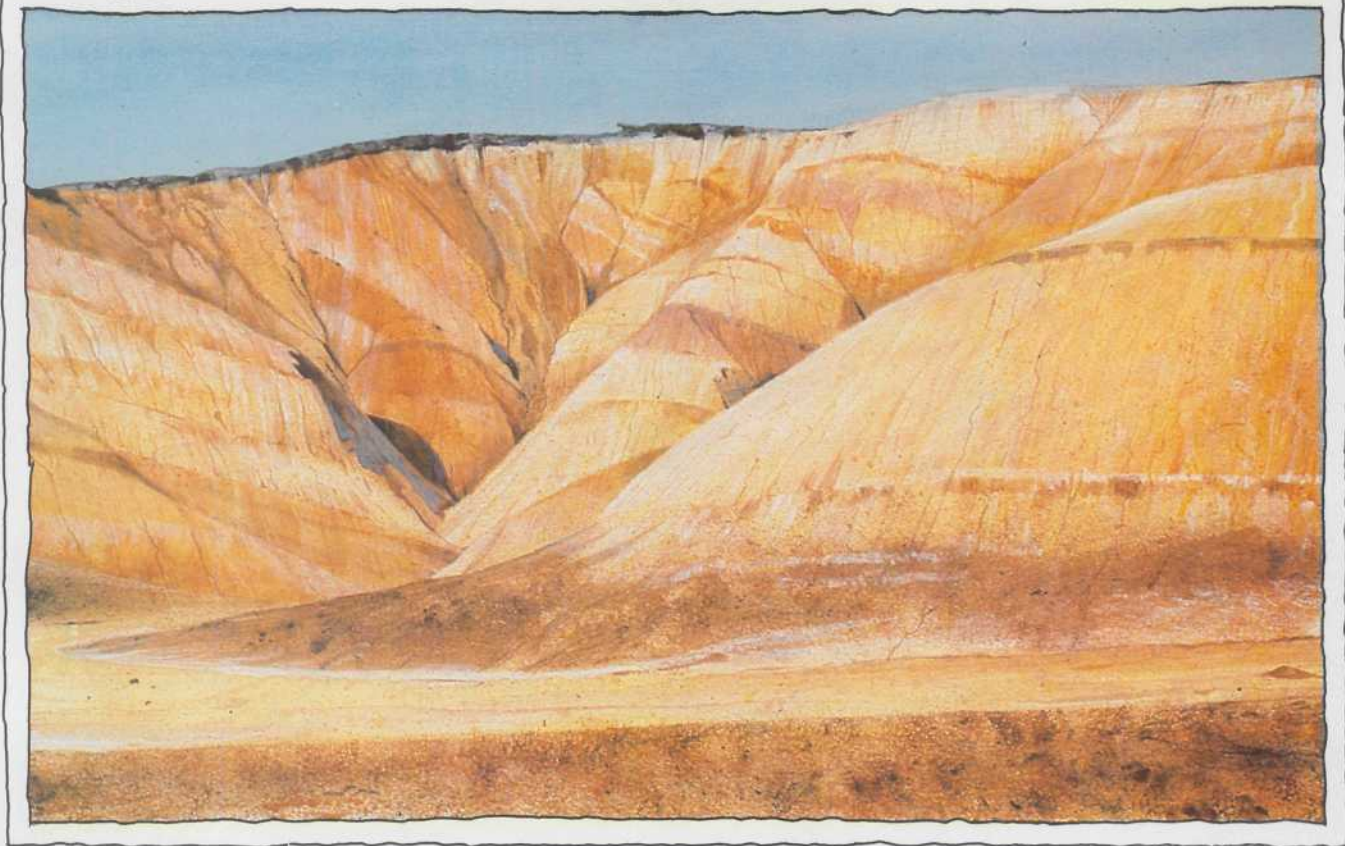
Death Valley is more than just landscape to paint, especially if you are a history buff. The "wild west" did hit the Valley and there's plenty of old litter to prove it! Boomtowns like Panamint, Greenwater, Skidoo, where some dreams came true in the 1880s, are gone. But you can find enough to paint — old buildings (Johnson Canyon), Stampmill (Pleasant Canyon), an old arrastre (Phinney Canyon), the beautiful classic ruins of Rhyolite (just outside the Valley through Hells Gate), and of course the borax works (Harmony ruins).

And just for the archeological record, people in Death Valley can be traced back to holocene time (past 10,000 years). Those are a lot of forgotten campfires. As many as five village sites have been located, with names like Tumbica (Furnace Creek), Mahunu (Grapevine Canyon), and one site is at the fork of Hanaupah Canyon. Take time out to gaze into the fire pits and paint the smoke-blackened cliffs that tell of another time.

There's a tale from the Panamint Shoshone Indians that says after Coyote stole the fire and gave it to the people, he told them that they lived in the center of the world (Death Valley!)

**S**O LET'S GET DOWN to the business of painting. The ability of the artist is revealed in how he





**DRY GULCH** — An almost woman-like warmth, mixed with curves.

**CLIFFS** — An earth still in motion is reflected by incomprehensible power to move earth and rock up and over. This formation is typical for Death Valley.



paints his shadows. This couldn't be truer for desert landscape painters, and it's especially true of Death Valley as the subject. Try doing some shadows first; squint your eyes to get the pattern, then go for the details, saving the darks for last. Painting shade is hard anywhere. However, in the Valley there are shadows I call "white shadows." They are made up of reflected light bouncing back into shade. Shadows should reflect the mother form; not so in the Valley. A shadow can be in a place you don't expect, or not in a place where it's supposed to be. Use more blue, green and gray in the shadows, it will add life. (An Indian told me once that artists are shadow-catchers. He's right.)

Although it is forbidden to take a rock or sand from the Valley, just outside in Greenwater Canyon, southwest of Death Valley, you can find ten different kinds of red-brown sands. Try it: take a tablespoon

of the color you like from the middle of the dry river bed, make sure there's as little silica (glass) as possible, and add enough water for a thick paste. Grind it up by hand (you'll like the texture of hand-ground pigments), and mix a gel medium, or waterbase glue. For tempera, mix with the yolk of an egg. Not only will you have your own color, but you can name it. I call mine "Coso (fire) Green."

Remember when painting in the Valley — early in the morning or late in the afternoon — the water will evaporate fast. You might want to add a little glycerin.

Paintings take time, so it is advisable to do a drawing first. Also, it's more convenient to paint from a drawing later, back at the campground or motel. I prefer charcoal. It makes for a better texture and has more guts than pencil. It is also easier to use. You can erase it, darken, or go back and lighten. For me it fits when drawing

the desert. Using burned wood doesn't leave the slickness of a graphite pencil, and with pen and ink you have to be so correct, to the point of hardness.

The main thing is to get out and do it!

Once out there you're in the land of borax, which makes a nice brush cleaner. Make your own cleaner! At the mouth of Greenwater Canyon, outside of the Park, pick up a handful of white borax, put it in a pot of boiling water, add ashes (sodium carbonate), leave for an hour. The remaining product is borax. Keep it watery and it's great for sable brushes.

*"No morning is the same, the desert is like the sea. The rocks, the canyons take on a glow that's different each day."*

Stan Dahl said that, a grey-bearded Death Valley prospector who found a lot of tungsten in the 1950s. He should know, living there, and he helped me to see, and I hope you too. **2**



# AFTER MOUNT ST. HELENS

GEOLOGISTS ARE GUARDEDLY OPTIMISTIC THAT  
THE OTHERWISE DEVASTATING FALLOUT WILL ENRICH  
ADJACENT WASHINGTON DESERTS.

by NICK PROVENZA

**The blackened crown of St. Helens (below) puffs out steam in an attempt to vent herself. (Opposite page) Wind caused incredible dust storms in Yakima during the week of the eruption.**

FROM THE EXTENSIVE fruit orchards of the Yakima Valley through the rolling wheat belt of the Columbia River Basin, the desert of eastern Washington is fertile and productive, but not necessarily because of volcanic ash.

When the North American continent's only active volcano, Mount St. Helens, exploded last May 18 with unbelievable power, she spewed millions of tons of gritty, dusty ash across the Washington Cascade range and much of the eastern Washington desert.

In the Yakima Valley — the doorway to the state's arid and semi-arid desert — the land was blanketed with a half-inch to one-inch of ash in the 24 hours following the blast. In the Columbia basin further to the east, in farming communities such as Moses Lake, a fine powdery ash fell to depths of two to three inches.

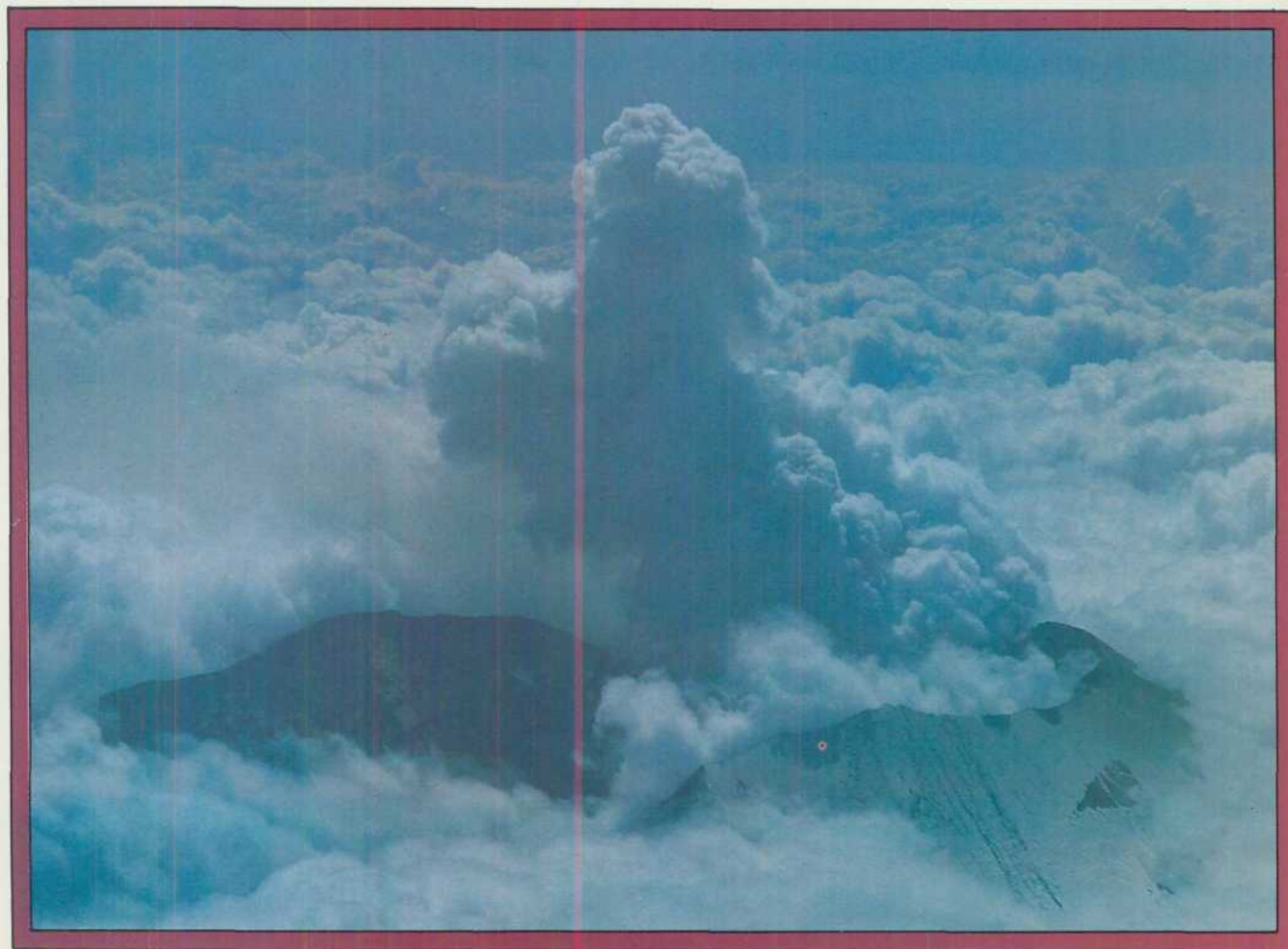
Unlike the prehistoric Sinagua Indians in Arizona

who reaped the agricultural rewards of a major ash deposit from what is now called Sunset Crater, ranchers in the Washington desert owe much of the richness of their land to the wind, geologists here say.

The early (circa 1050) Arizona eruptions, and similar ones in Mexico, deposited vast amounts of ash over large areas that were hardbaked and generally unproductive for man. The ash brought a porous, water-retaining quality to the land, making it tillable and productive.

The St. Helens ash that fell in eastern Washington will also make the soil more porous. The difference is, not nearly as much ash reached the desert areas of Washington as was dropped on the Arizona lands where the Sinagua Indians found themselves.

The richness of the soil that makes Washington's desert one of the nation's agricultural leaders ➡







is not what it is because St. Helens or the other volcanos have roared as they do.

What supports both man's plantings and the desert's own crop of cheat grass, sagebrush, and cactus are the windblown and water-carried soil deposits left here untold centuries ago.

"It's generally a falsehood that the soils here are mainly volcanic," said Dr. Robert Bentley, professor of geology at Central Washington University in Ellensburg. "What we have here mainly is windblown sands. The vast majority of the soils are what we call loess."

Winds raking across the Cascades for millions of years brought fine layers of rock and minerals to the desert, Bentley said. Also, a major flood originating north of Spokane 13,000 years ago sent gigantic amounts of water through what is now

**T**HE PLUME FROM the initial eruption, rising nine miles to the heavens, was caught by a northeasterly wind which brought the massive, black cloud across the mountains and into the desert.

The ash was deposited in depths up to a half inch as far as Spokane which is well over 200 miles from the volcano and which is the eastern boundary of the Washington desert. Lighter dustings of ash carried even further to the west.

"The distinct difference between the wind-carried material from the mountains and the ash from St. Helens," said Newell Campbell, a geologist at Yakima Valley Community College, "is that the ash was deposited quickly. Loess is deposited slowly over a long period of time. Certainly the deposits blown here, particularly in the

**C**AMPBELL SAID THAT some 6,600 years ago, Mount Mazama (where deep Crater Lake now exists in south central Oregon) blew its top, sending ash to the east for miles. Enough ash from that eruption reached eastern Washington to blanket the desert with a quarter inch of Mount Mazama debris.

As is expected to happen with some of the newly fallen St. Helens' ash, the Mount Mazama deposits were carried by the wind and surface water to the streams and rivers.

Driving along the scenic Yakima River Canyon road as it winds through the sparse desert hills between Yakima and Ellensburg, one can see a large, grayish white band along the canyon wall at a point where Squaw Creek dribbles into the river.

Stretching along the river-cut wall, the light-colored strip measures some three-feet thick, Campbell said. It is here that Mount Mazama's ash accumulated in the river and was preserved.

Despite popular belief even in eastern Washington that the desert soil is comprised of much volcanic ash, Campbell said one would be lucky to find an inch of ash in two feet of soil most anywhere here.

"I would say it would be considerably less than that," he said.

**T**HERE HAVE BEEN numerous guesses as to the effects the new ash deposits will have on the land, but many people believe it will be beneficial to some extent.

"This ash is going to help in that it will make the soil more porous," Campbell said. "That's the major benefit. It will have more water-holding capacity and there is a certain amount of chemicals in the ash that makes it more acid. Most plants and crops benefit from a slightly acid soil."

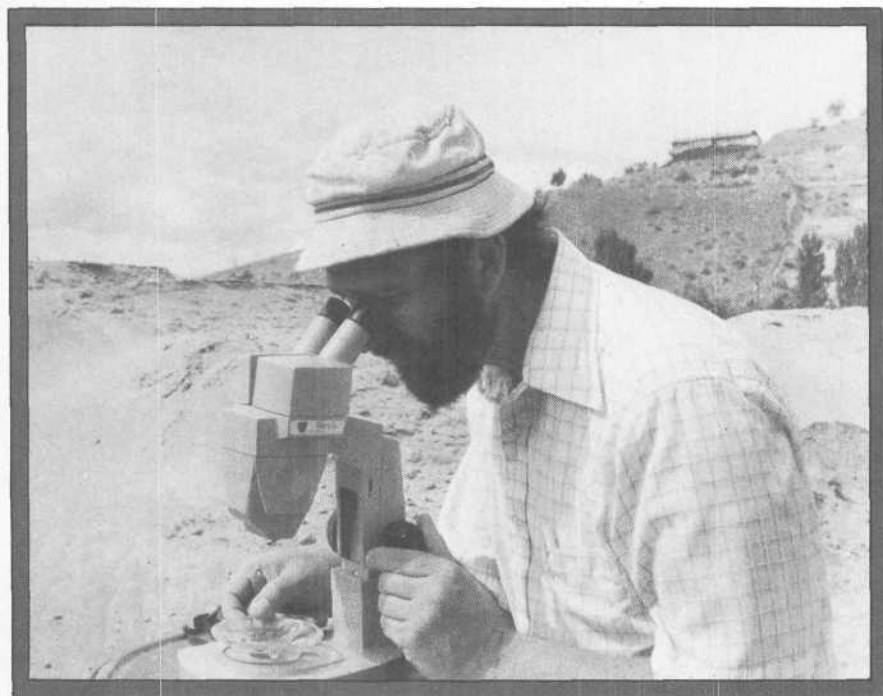
The ash cloud from St. Helens dropped not only different amounts of ash as the ash cloud rolled over the desert, but different consistencies fell in different places as well.

In the Yakima Valley, the ash was both a gritty, sand-like material and a fine powder. Campbell said the sandy deposits are actually pulverized bits of the outer volcano. The dusty material is ash, material that spewed from the bowels of the mountain. The Moses Lake area received mostly ash.

The ash in the Yakima Valley is mostly a silica and glass material, Campbell said. When wet, the ash looks very much like beach sand. When dry, the fine dust blows heavy across the desert.

No one knows for sure why it's so, but the cheat grass here has stayed greener than usual along the desert ridges and the rolling hills of the basin. The cactus has bloomed profusely and the sage brush has been strikingly more aromatic than in the past.

"We've had a pretty wet spring," Campbell said. "Are things growing because of the moisture or the ash? We'll have to wait and see." 



NICK PROVENZA

**Geologist Newell Campbell of Yakima Valley Community College checks consistency of the fallout, found both a sand-like material and a fine powder.**

southeast Washington and up into the Lower Yakima Valley. Soil deposits left behind by that flood still exist in many parts of the desert.

Yet, past eruptions from the Cascade volcanos, including St. Helens and Mount Mazama in Oregon (Crater Lake), have left their ash marks on the desert.

Mount St. Helens began her most recent spectacle at 8:32 on the morning of May 18. When the show was through, she had devastated a 150 square-mile area at her feet. She also left behind as yet unmeasured, but extremely deep deposits of hot gray ash for many miles around her.

Government geologists have said they will keep watch on the heavy layer of ash that blankets the area near the volcano to see what sort of shape the new valley there will have.

basin, have been here for millions of years."

In the Lower Yakima Valley, an irrigated and fertile region of fruit trees, asparagus, hops, mint, and grapes, Mount St. Helens has left a distinct geological record of her presence in the desert 13,000 years ago.

"There is a double layer of ash there," Campbell said. "The ash fell in a lake and was preserved in layers as it fell."

Geological studies have shown that St. Helens erupted violently 13,000 years ago. Ash from that eruption period reached the desert of the Lower Valley and was preserved in the water.

One layer of ash is slightly less than one inch thick and the second layer is a bit more than an inch thick. Both layers, exposed in places, are generally found four to eight feet below the ground.



# THE LIVING DESERT

## THE RAPACIOUS RED HARVESTER

by Susan Durr Nix

ANYONE WHO HAS ever been zapped by *Pogonomyrmex californicus* was the victim of the fiercest, boldest and most ornery animal in the desert. No, not the rattlesnake, despite the imposing scientific name, nor the scorpion with its intimidating tail. Not even the tarantula, whose bite is vastly overrated. No, you were stung by one of the most conspicuous and most numerous critters in the Southwest, the red harvester ant.

That such a little animal might pack such a powerful punch, the effects of which can last for more than a month, seems incredible; yet your throbbing, sweating hand is painful evidence to the contrary. To add insult to injury, you weren't even stung by a "fire ant," since that nickname belongs to another desert ant one third the size of the harvester and far less potent. What got you was a red-hot insect a quarter of an inch long, when you inadvertently disturbed the nest or got in the way of its frenzied, zigzagging search for seeds.

An empty stomach stimulates foraging in most animals. What they catch they immediately eat. But ants are motivated by an altogether different impulse — compulsive mothering. Theirs is a totally feminist society, where the short-lived males are mere fertilizing agents. It is a sorority of workers, the focus of which is not the queen, but the brood. Foragers out gathering seeds (and stinging people incidentally), nest builders excavating new chambers and tunnels, millers husking seeds, nurses licking eggs and attendants feeding the queen are all doing their part to sustain what must be the most child-oriented society on earth.

The queen herself does nothing but eat and lay eggs. These are immediately carried to brooding chambers by nurse ants, where they are given a fungi-resistant coating of saliva. Constantly renewed, this salivary coating makes the eggs stick together so they may be quickly transported to safety when danger threatens. The eggs soon hatch into soft, hairy, legless, voraciously hungry grubs, most of whom will be deliberately underfed by their otherwise conscientious nurses. Semi-starvation retards the development of fertilized eggs, producing a new generation of workers rather than a colony of queens. A select few receive food enough for complete development of ovaries and wings, these being the virgin queens

destined to form new colonies. The rest will be winged males equipped with keener eyesight than their sisters to help them locate queens during the nuptial flight, but hamstrung by imperfect instincts of little survival value in adverse circumstances. The males will die after they supply the queens with enough sperm for fifteen potential years of egg production.

Whatever their destinies, the larvae are lavished with care that includes constant cleaning and gentle conveyance from chamber to chamber. An ant nest, or



formicary, is "designed" for raising the brood. If its galleries and passages seem random compared to the monotonous regularity of a bee hive or wasp nest, they are deliberately so, to take advantage of differences in temperature and humidity. Eggs, larvae and pupae need different climates for development, so the brood is sorted according to age and size and shifted about by a colony sensitive to the slightest variation in temperature.

Although these ants are not blind, so much of their time is spent in the total darkness of the formicary that they have developed an exquisitely delicate sense of "smell-touch" located in their antennae. When antennae touch, an ant receives an odor-shape message akin to our sensing, if we could, "triangular garlic" or "pointed Mennen Skin Bracer." Every ant in the colony can be recognized not only by her own individual odor, but by shape-smells that identify her age, caste, nest, environment and species. Alien ants — even other red harvesters — without the right colony odor are savagely attacked.

An ant's mothering instinct extends to herself and others. Inside the nest she spends a lot of time licking and feeding her sisters and scraping sand off her own body. She will also rescue a comrade exhausted from foraging. In fact, if the nest site needs to be moved, a few "decision making" workers will organize the migration of the whole colony and even carry recalcitrant members to the new formicary.

Such a stable social life is possible only

with an abundant food supply. When food is scarce, it's every animal for himself. Primitive ants were carnivorous, a way of life that survives in nomadic species like the infamous army ants. The vast majority, however, have adapted to a varied diet or have become almost exclusively vegetarian. The harvesters are among the most specialized of ants. Although they won't bypass a succulent beetle, seeds are a more dependable food resource in the open deserts. Seeds are also storable, unlike insect bodies. The only problem with seeds is their size; they're not easy to carry with six legs and no hands. So harvesters have evolved unique seed carrying beards that grow forward under their "chins," creating a basket-like support for loads that appear much too big for an ant to tackle.

Seeds are carried into the nest where millers, equipped with very large mandibles (similar to beaks or teeth), remove the chaff. This is discarded in the kitchen midden outside the nest. It's easy to recognize a harvester colony by this trash heap and by the fan of excavated sand on one side of the entrance.

Typical harvester formicaries are over two yards deep. Excavation is a grain by grain process that is accomplished remarkably quickly. A digging ant resembles a miniature dog loosening the grains with her mandibles and tossing them back with her legs. A naturalist who weighed harvester mounds in the Oregon desert estimated that these ants carry four tons of soil to the surface per acre every five years. That's a lot of earth being aerated and renewed by these proxy earthworms.

Harvester workers live as long as seven years in colonies of several hundred to several thousand individuals. If necessary they can fast for more than a year. To better the odds at mating time, workers forcibly detain eager young queens and males until all the winged sexuals from all the colonies in the area are ready for the marriage flight. The queen's fertility guarantees many generations of workers, but ants don't keep all of their eggs in one basket: under certain circumstances, workers can also lay eggs. Colonies survive, ultimately, by cooperation and here in the desert, by an ability to endure flooding and drought. That remarkably potent sting and a panoply of survival techniques assure that here, as elsewhere, ants outnumber all other terrestrial animals. **2**



# THIRST IN THE CHISOS MOUNTAINS

*The Progress and Symptoms of Suffering  
Are Predictable – IF You Live To Tell About It*

**H**IKING UP THE dusty Texas trail my first day, I learned that time, thirst, heat and distance can be hard taskmasters to a flabby body. The next day I was to wonder if I could make it at all. But I never asked myself why I tried. I knew the answer to that question.

Desert mountains are beautiful and a special challenge to endurance. To enjoy that beauty one must be prepared for unique demands on the body. Most authorities say, for instance, that hikers need a gallon of water per day in such a hot, dry climate. Without enough water, a person here suffers agonies only partly imagined by the tired, thirsty hiker in the Teton or in the Smoky Mountains back East. I had not imagined what awaited me.

Alone in the Chisos Mountains, Big Bend National Park, I met only one group, six persons on horseback.

I had been trudging mostly upward about five hours, temperatures also rising — to some 110 degrees. The climb from Chisos Basin Campground to South Rim elevates about 1,800 feet in six miles on the west side trail. I'd return by the eastern trail, seven and a half miles.

After the hike was completed, puzzlement over its pains prompted me to research problems of dehydration, which I found are more complicated than most people think — attempting to solve problems sometimes creates more. In the exercising body in hot weather, just for starters, there are interrelationships between water, salt, potassium, heat, sweat, blood, brain and muscle cells and the body's temperature regulating mechanisms. And these effects aren't just strictly physical. Thinking ability and emotions can be distorted, too.

But I didn't know all this as I struggled up the trail to South Rim. My map showed most of my climbing finished. I'd crested the gap two hours ago and rested in peaceful Laguna Meadows. Despite a siesta, I was tired. Contrary to calculation, I was still hitting upward stretches. One doesn't make good time resting under every pinyon pine and juniper. Sweat crept out on my forehead as I tramped on.

**H**EAT MAKES THE body lose fluid even without exercise. With exercise the problem is compounded. If you have water and drink as much as your thirst demands, the

situation should be normalized. However, salt may be lost through sweat and urine, and salt is necessary to help retention of fluid and to maintain the body's chemical processes, one of which has to do with producing energy. Taking salt may help, but it also may interfere with the body's adjustment which involves the ability to retain salt. Then, too much salt may make the body lose water and potassium through increased urination. And it can cause blood clots. Potassium deficiency, in turn, will make you feel weak and weary, which is how I felt on that hike.

Shifting my pack on tender muscles, I paused to note light and shadow among trees and shrubs. Fine edgings of lighted leaves threaded dark oak masses, maguey daggers and molina spears. A thick two-foot ball of greenery hung from an oak tree. Mistletoe.

"Looking at scenery" was one of the activities an experienced desert ranger cited (after the fact) as contributing to some hikers' introduction to dehydration. Asked how people get into trouble in the desert, Jerry Epperson, who is now working at Grand Teton National Park but has had a total of about ten years in desert parks such as Carlsbad, Canyonlands and Arches, said their experience frequently begins quite innocently.

"Often two or three start out with one quart of water," he said. "They plan only two hours, start looking at scenery, stay longer and need more water."

Epperson pointed out there is usually more than one cause for the problem. Contributing factors may include being in poor condition, having had little desert experience, losing orientation and looking for a shortcut. He figured one's ability to read a map very important. "You may come out in the wrong canyon," he said, noting that you may have expected to find water in a certain canyon that you missed.

"Macho image" was another contributing factor he listed. Some people want to get a suntan, so they go without a shirt or hat and push too much. "It's better to cover the body with clothes," he said.

"The main problem is the lack of water, period," emphasized Epperson. He agreed with the usual one-gallon-per-day-per-person advice and noted the disagreement about ingestion of salt. "Most don't use salt tabs," he added.

He recalled the old army dictum about

not rationing your water. "It's much better to carry the water in your stomach than in your canteen," he said.

**W**ATER WAS MUCH on my mind long before I reached my clifftop campsite. Over a mile from my destination I gave up rationing and finished my first canteen. Two more to go, but dribbles down my back told me one of those was leaking. Securing the leaking canteen, I continued around a bend only to see yet more valleys and ridges ahead. Every muscle and bone screamed at my backpack which some evil genie inside the earth was drawing downward with the force of a thousand leaden pounds. I drank more water but my tongue still stuck to my teeth.

Sometimes rocky, sometimes soft dust, the trail urged me on with new plants, animals and rock formations around every bend. Here towered a twenty-foot century plant stem garnished with fluffy yellow flowers like lush golden islands, a feast to bees, butterflies and hummingbirds. There stood pinyon pines shading tender tan grasses and iridescent yellow blossoms of prickly pear cactus.

I finally stopped to sip the first luscious trickle from that second canteen. The container gurgled, marvelously heavy with precious cool liquid. I let my dry lips squish droplets until they dripped down my chin. A tiny wash bathed tongue and throat, disappeared into nothingness.

Rounding onto South Rim at last, I was not prepared for my first reaction to the vast, heat-blasted desert rolling and dipping in dim contortions far below and away to distant horizons. I was repulsed. I could not look at that virginal infinity without feeling I would have to cross it. I had only two tired legs, one canteen of water and a pounding weariness.

Over the cliff was a 2,500 foot drop. The folds below were giant hills, ridges, valleys and canyons. Bright patches were blinding, raging sunlight. Green blobs contained barbed desert plants. Away to the south were ridges of the Sierra del Carmen fifty miles off in Mexico. I turned away to find rest.

Then it rained. Huge drops spattered dust and cooled my face. I tied up a tarp to catch three cups of water. Drinking rain water and eating a sandwich, I began to feel better. ➡➡



"... the vast, heat-blasted desert rolling and twisting  
in dim contortions far below."





## ADVICE FOR DESERT HIKERS

**T**O SIMPLIFY explanation of all physiological complications of desert hiking and still give a complete and accurate description is impossible. For instance, in the body's reactions there are many minerals involved, and factors of age, health, physical conditioning and food come into play when water is scarce and heat is intense. However, don't be led into a false sense of security just because you're in good shape; even conditioned athletes have difficulties sometimes with dehydration and related problems. And they usually have medical help reasonably close at hand, whereas you backpacking in the wilderness may not.

The most important advice for combating heat and dehydration while hiking in the desert is to carry plenty of water, even though it is heavy. A gallon weighs eight pounds, but have a gallon for each day you will be away from a source of water. You can learn how to obtain water in an emergency; however, planning to avoid emergencies is even better.

Find out about salt requirements and determine your own body's needs. Such self-knowledge may come only after desert experience. There are indications that some advice about

taking salt tablets is old fashioned. People don't understand the whole complicated picture and they tend to think that if a little salt is good, a lot will be better. Wrong! A good reference is *The Sports Medicine Book* by Gabe Mirkin, M.D., and Marshall Hoffman.

While you are hiking, there are two more bits of advice you can follow. One is to conserve body fluid by staying out of the sun as much as possible, using as little energy as possible, opening the mouth only when absolutely necessary and keeping head and body covered with clothing to minimize evaporation of sweat.

The other bit of advice is to drink as much water as your thirst dictates, even though you know you are going to run out of water. Research indicates that rationing doesn't help. Sitting in the shade, you will only live three days in 110 degree heat on one quart of water no matter how you sip it; you can drink it all the first day and still live two more days. Furthermore, authorities say you are probably better off if you drink until your thirst is quenched. Another book to consult (the most complete analysis I found on the subject) is *Physiology of Man in the Desert* by E. F. Adolph and Associates.

DAYS OF EXPECTED SURVIVAL IN THE DESERT UNDER TWO CONDITIONS

Condition	Max. daily shade temp., °F.	Available water per man, U.S. quarts					
		0	1	2	4	10	20
No walking at all	120	2	2	2	2.5	3	4.5
	110	3	3	3.5	4	5	7
	100	5	5.5	6	7	9.5	13.5
	90	7	8	9	10.5	15	23
	80	9	10	11	13	19	29
	70	10	11	12	14	20.5	32
Walking at night until exhausted and resting thereafter	120	1	2	2	2.5	3	
	110	2	2	2.5	3	3.5	
	100	3	3.5	3.5	4.5	5.5	
	90	5	5.5	5.5	6.5	8	
	80	7	7.5	8	9.5	11.5	
	70	7.5	8	9	10.5	13.5	

from *Physiology of Man in the Desert*

The next day's hike should be a cinch I thought as I lay on a ground tarp in my juniper hideaway. Seven and a half miles, mostly downhill, shouldn't take anywhere near the seven hours of my uphill climb. I would start very early and be back in the basin before midday heat. Water shouldn't be any problem for such a short time, but I saved a little rain water, abominably tasting though it was.

I would have been more worried if I had known what a shortage of water might mean that next day. The symptoms and progress of suffering are predictable. Here's how it goes. First symptoms are weariness, loss of appetite and thirst. In addition to these unpleasant sensations, research subjects have sometimes felt dispirited or irritated. Cramps may appear early due to a shortage of salt and

potassium. When the body starts using its reserves of fluid, the victim loses weight. Even a 2-1/2 percent loss of fluid is serious. Nausea starts at 5 percent loss. Body temperature rises. At 6-10 percent loss comes giddiness, headaches and itching of limbs. The mouth dries up; lips become sore and they ache. Mucous membranes dry up and may start peeling. Nevertheless, at 10 percent loss, the person can still recover with water.

**N**EXT MORNING, after a long thirsty night of catnapping in bright moonlight, I heard a bird squawking below the rim of the cliff. The sun was just coming up in red velvet over a deep purple desert. Time crept up on me again.

"About four hours, depending on what



condition you're in," the Chisos Basin ranger had said about 8 a.m. yesterday as he filled out my permit.

I had asked how long it would take to hike to the South Rim.

"It's a rugged climb up there," he had added. Then he looked at my one hip canteen and asked, "Is that all the water you have?"

"No, I have two more canteens," I had replied.

He nodded and informed me Boot Spring was dry. I had drunk from the ranger station water cooler and left. Now I carried less than one canteen of water. I had to make it down in four hours.

About 7:30 a.m. I shouldered my pack and left South Rim. Boot Canyon trail crisscrossed a stream bed that should have been dry, but yesterday's rain had puddled it. The day was already warm, so I washed my face, hands and arms. Though horse manure sprinkled the trail nearby, I tasted the water — delicious. Not daring drink more, I moved on through the cool shade of canyon cliffs and trees.

After two or three miles I came to Boot Spring. Already tired and thirsty, I walked down, peeled off my backpack and looked around the shady glen. A trace of sparkling water dribbled from two strings of moss about ten feet up. A sign nearby said,

"I began plotting where the closest water would be."





slowly closer to the Chisos Basin ranger station. Very slowly. I rested far less than I had on the way up and still seemed to take forever.

I began plotting where the closest water would be. The public rest room? The ranger station? The lodge? The store? A cottage? The motel? My dry mouth drove me on. I pictured myself plunging my head into a wash basin with water running into my mouth and all over my face. I visualized the ranger's water cooler with that crystal cold stream arching up to my lips. I saw the fountain clerk at the lodge sliding a frosted glass of ice water in front of me. I also saw a tall vanilla milkshake, but not near as clearly as I saw that mouthwatering water.

I passed spears of sotol, century plant and lecheguilla. Lumpy contorted forms of prickly pear and cholla cactuses came into view and disappeared behind me. Crazy crooked ocotillo arms stood motionless as I limped by. Mourning doves whirled, cactus wrens chattered and brown towhees stood silently. I walked on and on and on. Even the bridal veil ruffles of white Chisos prickly poppies couldn't hold my attention. I hobbled by Boulder Meadow and shuffled through the fluffy dust of Juniper Flat.

I glanced hopelessly at the big water tank, wishing for a spigot. I passed cottages, motel, trailers. Lips pressed tightly together, I marched myself stoically, staggering mentally, into the ranger station.

The water cooler was right by the door. Fortunately, no one was there. I took a few sips, dumped my backpack on the wooden bench and then wallowed ecstatically in water. Clutching handfuls of the icy liquid, I dashed some in my face and sloshed it all over my arms and legs. I leaned into the fountain, both arms on the cold, wet metal where the water flowed soothingly against my skin. The stream spurted against my lips and moistened my tongue. I drank and it was so sweet I couldn't believe it. After an hour of resting and drinking, resting and drinking, I was satisfied.

I'll go back again for the strangeness and beauty that is Chisos Mountains but not without plenty of water. Dehydration is a merciless teacher, even when it only hints at its powers. **[Z]**

"Untreated water, not recommended for human use."

I got my cup and climbed up the boulders, drank the suspect water, reached for more and drank again. This was the same stream that crossed the horse manure, but I already knew I was going to be desperate for water soon. My last canteen was getting low.

As I picked my way back across the rocks I noticed a horizontal pipe emerging at the base of the sign. On the end was a faucet. So this was Boot Spring. Not very romantic, but serviceable. I turned the faucet and a tiny stream came out. It tasted metallic, and I did not fill any canteens. I would regret my caution.

After a rest, I renewed my attack on the trail, which for the next mile declined the wrong way — *up*. How nice it would feel to ditch my backpack and saunter the rest of the way a free spirit. Maybe I could pay a ranger to get it. The temptation wasn't quite strong enough, though.

I had a chuckle along that trail. Impaled on a branch was a note. It said, "Found your pack . . . pick it up at the ranger station." So someone else had had the same thought I did! I pictured that person perspiring up the trail, shucking the pack and prancing away. My sympathies. I hope he had water.

**T**HE PASS AT LAST. Three more miles to go — all downhill, I hoped. A grassy area among trees provided a place to rest. Sitting on a log I forced myself to eat a peanut butter and jelly sandwich, and I drank the remainder of my good water. A little rain water would have to carry me the rest of the way.

I relaxed a half hour. During that time a knot formed in each calf. Perhaps that meant I had lost too much salt.

I knew it was getting near noon. The sun was hot and high. I had to move on. The pack seemed heavier than ever. I started down.

I drank a little rain water. Each time I took a sip I silently said, "Blah!" or "Pluhh!" or "Blukh!" It tasted like dirt and aluminum.

The trail was tortuous and rocky, perversely going up sometimes. It was hard on sore legs. My calf muscles felt like clenched fists beaten with a sledge hammer. Sometimes stomping seemed to help. For a while it was best to walk stiff-legged. Other times I dragged my feet. Still they ached. I massaged them, I pounded them, I shook them. No improvement.

Alligator junipers, madrona, one-seeded junipers, drooping junipers, oaks and pinyon pines afforded occasional shade and framed views that showed I was getting





Happiness  
is a  
Warm Clam

Picture Yourself in One of  
Our New, Colorful and Stylish

## CLAM-MAN T-Shirts!

(Great gift item, too!)

Now available for men and women.

Man's shirt is heavyweight all-cotton with "Happiness is a Warm Clam" pocket. Colors: Lt. Blue, Tan, Orange, White. Sizes: Small, Medium, Large, X-Large. CLAM MAN picture on back. \$6.95 ea. postpaid. Woman's shirt is 50% cotton, 50% polyester. Colors: Lt. Blue, Tan. Sizes: Small, Medium, Large. CLAM MAN design on front. \$6.95 ea.

**Order Yours Today!**

☐ Yes, rush my CLAM MAN T-Shirt order as follows:

\_\_\_\_ Man's \_\_\_\_\_  
SIZE/COLOR(S)

\_\_\_\_ Woman's \_\_\_\_\_  
SIZE/COLOR(S)

Total shirts ordered \_\_\_\_\_

Amount enclosed (\$6.95 ea.) \$ \_\_\_\_\_

Calif. residents add 6% sales tax.

Name \_\_\_\_\_ 809

Address \_\_\_\_\_

City/State \_\_\_\_\_ Zip \_\_\_\_\_

Send order and payment to:

**CLAM MAN T-Shirts**  
P.O. Box 1318  
Palm Desert, CA 92261

# CHUCK WAGON COOKIN'

## Harvesting And Preserving The Prickly Pear Cactus

by J. Darlene Campbell

**T**HE SOUTHWESTERN INDIANS Have taught us much in the way of food preservation, leather tanning and cultivation. They excel in self-sufficiency. What other race of man can live off the seemingly bare and unproductive desert? So take a closer look at the prickly pear cactus, fruit of the desert, and learn from our Indian brother for he was aware of this bounty. Perhaps his own dependency upon the fruit compelled him to carry cuttings as he migrated, for no other cactus grows wild in more areas of the United States and Mexico than this one. And after a particularly wet spring, the desert produces a bumper crop of nutritional prickly pear, yours for the harvesting.

The large, showy blooms of yellow, pink and red are born on flattened stems. The wild species are protected by patches of spines. However, spineless varieties have been developed for cultivation as the fruit is popular in Mexico and sold in the markets as "tuna." But we are going to gather from the wilds so beware of those sharp spines. They are a nuisance, but the real ones to be feared are the tiny soft appearing barbs of glochids on the fruit itself.

The pears ripen in late summer, depending on altitude, and should be gathered at the peak of ripeness for a pleasing fruity flavor unless you are making jelly. For that, it is best to toss in a few pears on the green side for added pectin. Contrary to its name, it is not pear shaped, but rather like a plum in appearance. The color being a deep magenta also reminds one of a garden

plum. The fleshy pulp compares favorably with the plum in phosphorus, niacin and riboflavin, and is considerably higher in food energy, calcium and carbohydrates.

In gathering the fruit, wear leather gloves or use a long-handled tong as the glochids, the innocent-appearing prickles, are quite difficult to remove from the hands. I prefer to wear the gloves. And grasping the fruit between thumb and index finger, I pick it with a twisting motion. I later remove the glochids either by passing the fruit through an open flame or by brushing with a vegetable brush. Do not attempt to keep the fruit for an extended length of time before processing as once picked, it will rapidly lose nutritional value and may ferment.

Once the glochids are removed, the prickly pear can be eaten fresh or prepared in any of several ways. I have peeled, sliced and frozen it very successfully following the same method used to freeze fresh berries. It can be made into jelly, conserve, marmalade or salads. The juice makes a healthful drink when diluted with water or other fruit juice. For a different taste treat, mix with ginger ale or try mixing with unflavored gelatin and chill.

Mother's favorite dessert, pie, can be made if the pears are precooked and used with another fruit filling of apple, rhubarb or strawberry.

An expensive dehydrator is not for drying the prickly pear. The Indians dried it in the sun, much the same way we do raisins, and I think it is the easiest and most versatile of the preserved products. The dried chunks can be munched for snacks or reconstituted with water and used as the fresh pear. Simply wash, peel and remove the seedy pulp. Cut into half inch wedges and spread on drying trays so the air can circulate freely on all sides. When the

*Ed. Note: Ms. Campbell is "Cookin'" this month while Stella Hughes enjoys a well-earned vacation.*

## Composition in Term of 100 Grams Edible Portion

PRICKLY PEAR	Food Energy	Protein	Fat	Total Carbohy- drate	Fiber	Ca	P	Fe	Vit. A Value	Thiamine	Ribo- Flavin	Niacin
	Cal.	gm	gm	gm	gm	mg	mg	mg	mcg	mg	mg	mg
with seeds	60	1.4	1.4	12.1	6.6	46	32	1.2	10	.02	.03	0.4
without seeds	68	0.5	0.1	18.1	0.3	26	16	0.8	5	.00	.03	0.2

pieces of pear feel dry on the outside but still bend, they are finished. Store in covered containers.

So wear your biggest hat, boots and gloves, and harvest nature's bountiful desert treasure. There is never worry about waste as the pulp and seeds are relished by both poultry and livestock.

### PRICKLY PEAR JUICE

Select ripe prickly pears and a few on the green side to add pectin if making jelly. Wash and rinse. Place in a kettle with 1 cup of water and cook over low heat until tender, about 20 minutes. Mash with a potato masher and strain through a double thickness of cheesecloth to remove seeds and tough fibers.

### PRICKLY PEAR JELLY

4 cups prickly pear juice  
5 cups sugar  
1 package of pectin

Follow manufacturer's directions for adding ingredients and boil for 5 minutes. Pour into sterilized jars and seal. Should syrup not jell, repeat cooking time.

### PRICKLY PEAR PUREE

Wash and peel ripe prickly pears. Cut in half with a knife and scoop out the seeds. Force the raw pulp through a food mill or medium-fine strainer. Freeze either fruit pulp or the puree. Simply pack into freezer containers and seal. Thaw before using.

### PRICKLY PEAR SALAD DRESSING

1/2 cup prickly pear puree  
1/3 cup salad oil (not olive oil)  
1 tsp. salt  
1 tsp. sugar  
3-4 T. tarragon white wine vinegar  
Shake all ingredients together in a covered jar. Makes about 1 cup. This pretty pink dressing is thin like an oil and vinegar dressing but lower in calories. Good on both fruit salads and tossed green salads.

### PRICKLY PEAR MARMALADE

4 cups chopped prickly pears  
1 cup sliced lemon  
2 oranges  
sugar  
Chop orange peel and pulp. Add 4 cups water to lemon and orange. Let stand 12 to 18 hours in a cool place. Boil until peel is tender. Cool. Measure lemon, orange and water in which cooked. Add chopped prickly pears and 1 cup of sugar for each cup of combined pear, lemon, orange and water. Boil to the jelling point. Pour, boiling hot, into hot jars; Seal at once.

## WEST WIDE MAPS

"IT COSTS TO GET LOST!"

Don't use a road map.

Use a TOPO map.  
Let us help you find  
your heart's desire: Gold,  
Ghost Towns, Hiking Trails  
Travel by-ways or Wildlife.

Just \$1.75 plus \$1.30 shipping  
per order.

(Calif. residents add 6% sales tax)  
We have 29,000 USGS Quads  
of all western states

WESTWIDE MAPS CO.  
Topographic Maps  
114 West 3rd Street  
Los Angeles, CA 90013

Call Walker S. Clute  
(213) 624-2679

"ON YOUR DESK  
TOMORROW MORNING"

## Jeep

"our only business"

SALES - LEASING  
PARTS - SERVICE  
We Service What We Sell

JOHNSON'S 4WD CENTER

7590 Cypress Ave. at Van Buren  
Riverside, Calif. 92503 (714) 785-1330

"Two Grey Hills"



CROCHETED INDIAN  
RUG DESIGN

New and simple technique in basic double crochet creates this beautiful 12" x 24" reversible fringed throw. Kit includes step-by-step instructions, pattern diagram and yarn. (Hook not included) Prompt shipment direct or as gift from you.

Kit No. 118-7C-3	\$12.95
Size "H" crochet hook	1.49
Pattern Only	3.50
Other brochures	.50

WOVEN STITCH CROCHET  
P.O. BOX 212  
ALAMOGORDO, NEW MEXICO 88310

## Would It Pay You to Advertise in Desert Magazine?

Do you have a product or service that would appeal to people who are involved with desert living or those who love to explore the Southwest? Something to make their desert lifestyle or backcountry outings more rewarding . . . or just more fun?

Do you have a useful product for rockhounds, or prospectors, or some quality outdoor gear for desert campers? An item to better protect hikers from the elements? Or an RV accessory that makes rough-road side trips safer, more comfortable?

Do you have some fine examples of Indian or Western art or crafts? Or a scenic or otherwise special stopping place for the desert traveler? A better guide to some remote but inviting locale in the Southwest?

If so, we think you will find **Desert Magazine** a productive place for your advertising message. Our paid circulation is now 50,000 a month and growing.

Write us for rates and closing dates, or call.

**Desert Advertising**  
P.O. Box 1318, Palm Desert,  
CA 92261  
(714) 568-2781

## Moving?

Please let us know 8 weeks in advance to insure continuous service on your **Desert Magazine** subscription. Attach the mailing label for your old address and write in your new address below.

NEW: \_\_\_\_\_

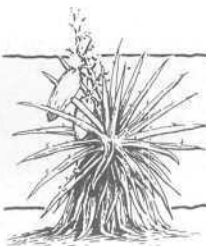
Zip \_\_\_\_\_

4509

PLACE LABEL HERE

☐ Please renew my subscription for  
☐ 1 year \$10 ☐ 2 years \$19  
☐ Payment enclosed ☐ Bill me later  
ADD \$4 PER YEAR U.S. CURRENCY IF OUTSIDE U.S.  
POSSESSIONS CANADA OR MEXICO  
Mail to: **Desert Subscriber Service**  
P.O. Box 28816, San Diego, CA 92128





# DESERT BOOK SHOP

## Gold

**WHERE TO FIND GOLD IN THE MOTHER LODGE** by James Klein. The author is a partner in K & M Mining Explorations Company, which is now developing three gold mining claims. Includes a history of the gold rush, geology of the Mother Lode, where to find gold, county by county, and how to find gold, including information on equipment, panning, dredging, and how to stake a claim. Pb., 121 pgs., \$4.95.

**SUCCESSFUL COIN HUNTING** by Charles L. Garrett. A complete guide on where to search, metal detector selection and use, digging tools and accessories, how to dig, and the care and handling of coins. Newly revised, Pb., 231 pgs., \$5.95.

**HIGH MOUNTAINS AND DEEP VALLEYS** by Lew and Ginny Clark, with photographs by Edwin C. Rockwell. A history and general guide book to the vast lands east of the High Sierra, south of the Comstock Lode, north of the Mojave Desert, and west of Death Valley, by oldtimers who know the area. Pb., 192 pgs., 250 photographs, and many maps. \$6.95.

**THE GOLD HEX** by Ken Marquiss. Strange gold tales such as "Jim Dollar's Jimdandy," "Tybo Three Shot," "Buzztail Loot" and "The Lost 'Droopy Angel' Lode." Pb., illus. with photos and maps, 146 pgs., \$3.50.

**LET'S GO PROSPECTING** by Edward Artbur. Learn about minerals and their characteristics, prospecting, descriptions of industrial minerals of California, metallic ores, as well as mineral maps of California. Pb., 80 pgs., \$6.50.

**GOLD RUSH COUNTRY** by the Editors of Sunset Books. A revised and updated practical guide to California's Mother Lode country. Divided into geographical areas for easy weekend trips, the 8" x 11" heavy paperback new edition is illustrated with photos and maps. Special features and anecdotes of historical and present-day activities. Pb., 96 pgs., \$3.95.

**GOLD RUSHES AND MINING CAMPS OF THE EARLY AMERICAN WEST** by Vardis Fisher and Opal Laurel Holmes. 300 pictures and 466 pages, divided into "The Gold Rushes," "Life in the Camps," "Crime and Justice," and "Special Characters and Situations." Based "as far as possible, on primary sources," to give the general reader a broad picture of the American West. Hb., \$22.95.

**GOLD LOCATIONS OF THE U.S.** by Jack Black. Includes Alaska with streams, lodes and placers, production figures, type of gold, locations "for the serious amateur who hopes to find enough gold to make a living." Pb., 174 pgs., \$6.95.

**HOW AND WHERE TO PAN GOLD** by Wayne Winters. Gold placers, how to pan, the "wet" processes, amalgamation, the "hows" of claim staking, metal detectors, camping tips for prospectors and miners, and location maps. Pb., 72 pgs., \$3.00.

**GOLD FEVER** by Helen E. Wilson. History of the gold mining days in Jarbidge, Nevada, through the lives of persons then living. Illustrated with many old photographs. Pb., 129 pgs., \$5.00.

## Mining

**FROM THIS MOUNTAIN, CERRO GORDO** by Robert C. Likes and Glenn R. Day. The height of the boom, the decline, the entire history of this mining outpost of Cerro Gordo, is told in detail. Pb., illus., \$3.95.

**TELLURIDE "FROM PICK TO POWDER"** by Richard L. and Suzanne Fetter. The Feters have written about one of the wildest mining towns of Colorado, one that had its own law and was the prototype for hundreds of Hollywood movies. The people that made up Telluride's day included Butch Cassidy and his Hole in the Wall gang who found the bank in Telluride too rich to pass up. Big Billy, the kindhearted madam, and L. L. Nunn, the eccentric genius who used alternating current for the generation of power for the first time anywhere. With black and white photographs, maps, reprints from Telluride's newspaper, and their last chapter, "A Walking Tour of Telluride," the Feters have written an informative and highly readable history. Pb., 194 pgs., 9" x 6", \$4.95.

**MINES OF JULIAN** by Helen Ellsberg. Facts and lore of the bygone mining days when Julian, in Southern California, is reported to have produced some seven million dollars of bullion. Pb., well illus., \$2.50.

## Hiking

**BACKPACKING GUIDE TO SAN DIEGO COUNTY** by Skip Ruland. An informative, no-nonsense primer to day hiking and extended several-day trips into the Southern California mountain and desert back country, covering more territory than the title suggests. Also this little book contains emergency information useful wherever you hike or travel in the back country. Pb., 80 pgs., several maps and sketches, \$2.95.

**BACK COUNTRY ROADS AND TRAILS, SAN DIEGO COUNTY** by Jerry Schad. Concentrating on the mountains and desert of So. California's San Diego County, there are trips to the Palomar Mountains, the Julian area, the Cuyamaca Mountains, the Laguna Mountains, and the Anza-Borrego Desert. Trips reachable by car, bicycle or on foot. Pb., 96 pgs., illus. with maps and photographs, \$4.95.

**DESERT HIKING GUIDE** by John A. Fleming. A clearly-presented guide, describing 25 day hikes in the Coachella Valley of Southern California, from Palm Springs to the Salton Sea. There is a map for location of each hike, total mileage per hike given, round trip time, and elevation gain. Pb., 8-1/2" x 5-1/2", 28 pgs., \$2.50.

## Travel

**EASTERN SIERRA JEEP TRAILS** by Roger Mitchell. Covering the area of the eastern fringe of the High Sierra, these are byroads and back country routes for the intrepid 4WD'er. Pb., illus., maps, \$1.00.

**THE NEVADA DESERT** by Sessions S. Wheeler. Provides information on Nevada's state parks, historical monuments, recreational areas and suggestions for safe, comfortable travel in the remote sections of western America. Pb., illus., 168 pgs., \$2.95.

**THE COMPLEAT NEVADA TRAVELER** by David W. Toll. Not the usual guidebook, the author has divided the state into four regions: mining country, Big Bonanza country, cattle country, and Mormon country, with special information on big game hunting, rock-hounding, the Nevada state park system, maps, etc. Toll includes the humorous sidelights of Nevada's history and its scandalous events, all in a light, readable style. Pb., 278 pgs., \$3.50.

**HOT SPRINGS AND POOLS OF THE SOUTHWEST** by Jayson Loam. A delightful directory compiled by the Aqua Thermal Association, with detailed descriptions, photographs maps, history of hot springs and mineral waters in California, Nevada, Arizona, and New Mexico. Complete, well-indexed and researched. Pb., 9-1/8" x 7-3/8", 192 pgs., \$7.95.

**TRACKING DOWN OREGON** by Ralph Friedman. An excellent general history of California's northern neighbor, which has as much desert of a different description plus a lot of sea coast and exciting history. Many photographs of famous people and places and good directions how to get there. Pb., 307 pgs., more than 100 photographs, \$6.95.

**THE OREGON DESERT** by E. R. Jackman and R. A. Long. Filled with both facts and anecdotes, this is the only book on the little but fascinating deserts of Oregon. Anyone who reads it will want to visit the areas — or wish they could. Hb., illus., 407 pgs., \$9.95.

**THE BLACK ROCK DESERT** by Sessions S. Wheeler. One of Nevada's least-known and most scenic historical desert areas is described by the state's leading professional historian and author. Black Rock is part of the huge Great Desert Basin and was the setting for Indian battles and

## Cookery

**CHUCK WAGON COOKIN'** by Stella Hughes. (Desert Magazine Bookstore's No. 1 best-seller.) Recipes collected straight from the source — cowboy cooks. Contains Mexican recipes, instructions for deep-pit barbecue, the art of using Dutch ovens for cooking, and everything from sourdough biscuits to Son-of-Gun stew. Pb., 170 pgs., \$8.50.

**SOURDOUGH COOKBOOK** by Don and Myrtle Holm. How to make sourdough starter and many dozens of sourdough recipes, plus amusing anecdotes by the authors of the popular OLD FASHIONED DUTCH OVEN COOKBOOK. A new experience in culinary adventures. Pb., 136 slick pgs., illus., \$4.95.

**CITRUS COOK BOOK** by Glenda McGillis. An unusual and outstanding treasury of citrus cookery. Includes tips on freezing, juicing and shipping. Pb., spiral-bound, \$2.00.

**DE GRAZIA AND MEXICAN COOKERY.** Illus. by De Grazia, written by Rita Davenport. In her preface, Rita Davenport says, "Mexican foods — like Mexico itself — can be a fiesta of colors. So, enjoy our rainbow of recipes and the delightful De Grazia artwork that follows." Aptly stated, as this is a charming cookbook. Pb., spiral-bound, 63 pgs., \$4.95.



**Don Holm's Book of FOOD DRYING, PICKLING AND SMOKE CURING** by Don and Myrtle Holm. A complete manual for all three basic methods of food processing and preservation without refrigeration or expensive canning equipment. Also contains instructions and plans for building the equipment needed at home. An excellent publication and highly recommended for the homemaker, camp cook or the expedition leader. Pb., well illus., \$4.95.

**DUTCH OVEN COOKBOOK** by Don Holm. Wildlife editor of the *Portland Oregonian*, the author has spent his life exploring and writing about the outdoors, so his recipes for preparing food in a Dutch oven come from experience. If you haven't had food cooked in a Dutch oven, you haven't lived — and if you have, you will find these recipes new and exciting culinary adventures. Heavy pb., 106 pgs., \$4.95.

## Baja California

**A FIELD GUIDE TO THE COMMON AND INTERESTING PLANTS OF BAJA CALIFORNIA** by Jeanette Coyle and Norman Roberts. Over 250 plants are described with 189 color photos. Includes past and present uses of the plants by aborigines and people in Baja today. Scientific, Spanish, and common names are given. Excellent reference and highly recommended. 224 pgs., Pb., \$8.50.

**THE CAVE PAINTINGS OF BAJA CALIFORNIA**, *The Great Murals of an Unknown People* by Harry Crosby. A sequel to his *THE KING'S HIGHWAY IN BAJA CALIFORNIA*, the author presents a tantalizing disclosure of a sweeping panorama of great murals executed by an unknown people in a land which has barely been penetrated by man. Beautifully illustrated with color reproductions of cave paintings and sketches of figures which appear on cave walls in four different mountain ranges. Hb., large format, 174 pgs., \$18.50.

**THE KING'S HIGHWAY IN BAJA CALIFORNIA** by Harry Crosby. A fascinating recounting of a trip by muleback over the rugged spine of the Baja California peninsula, along an historic path created by the first Spanish padres. It tells of the life and death of the old Jesuit missions. It describes how the first European settlers were lured into the mountains along the same road. Magnificent photographs, many in color, highlight the book. Hb., 182 pgs., large format, \$14.50.

**OFFBEAT BAJA** by Jim Hunter. A guide to hidden bays and beaches, islands, and missions, with dirt road classifications rated "1" (easy) to "10" (practically impossible), what to expect in terms of gas, water, shelter, etc. Photographs, maps, bibliography. Pb., 156 pgs., \$5.95.

**THE BAJA BOOK II** by Tom Miller and Elmar Baxter. Highly recommended by Jack Smith, author of *GOD AND MR. GOMEZ*; Jerry Hulse, Travel Editor of the *LA Times*; Frank Riley of *Los Angeles Magazine*; Stan Delaplane, syndicated travel writer; and Don Sherman, *Car and Driver Magazine*, among others. Includes 50 detailed mile-by-mile road maps and NASA Baja Spacemaps, with more than 100 illus. Pb., 180 pgs., \$8.95.

## Mexico

**MEXICO'S WEST COAST BEACHES** by Al and Mildred Fischer is an up-to-date guide covering the El Golfo de Santa Clara to the end of the highway at Manzanillo. Excellent reference for the out-of-the-way beaches, in addition to the popular resorts such as Mazatlan and Puerto Vallarta. Although traveling by motorhome, the Fischers also give suggestions for air, auto, ferry, and train travel as well. Pb., well illustrated, 138 pgs., \$3.00.

**THE PEOPLE'S GUIDE TO MEXICO** by Carl Franz. The *LA Times* says: "For valuable help as well as entertainment... lets you know what a visit to Mexico is really like." Tips on personal preparation, your car, driving in Mexico, public transportation, hitching, hotels, rentals, camping, economizing, restaurants, foods, markets, stores, cooking, alcohol, services, health, tourists and the law, speaking Spanish, customs, *machismo*, buying things, red tape, maps, information, and personal anecdotes! Pb., 6" x 9", 579 pgs., \$9.00.

## Indian Lore

**SPEAKING OF INDIANS** by Bernice Johnston. An authority on the Indians of the Southwest, the author has presented a concise, well-written book on the customs, history, crafts, ceremonies and what the American Indian has contributed to the white man's civilization. A MUST for both students and travelers touring the Indian country. Heavy Pb., illus., \$2.95.

**AMERICAN INDIAN FOOD AND LORE** by Carolyn Neithammer. The original Indian plants used for foods, medicinal purposes, shelter, clothing, etc., are described in detail in this fascinating book. Common and scientific names, plus descriptions of each plant and unusual recipes. Large format, profusely illus., 191 pgs., \$5.95.

**POTTERY TREASURES**, *The Splendor of Southwest Indian Art, Photography* by Jerry Jacka; Text by Spencer Gill. A beautiful all four-color publication showing the intriguing designs of the masters of the Indian pottery makers of the American Southwest. You will learn of clays and colors and the traditional methods of handforming, finishing, and firing. Large format, \$9.95.

**INDIAN BASKET WEAVING**, *How to Weave Pomo, Yurok, Pima and Navajo Baskets*, by Sandra Corrie Newman. Besides explicit information on gathering and preparation of natural materials and weaving techniques, the author brings out the meaning of the craft to the partakers of these traditions. Pb., lavishly illus., 91 pgs., \$4.95.

**FETISHES AND CARVINGS OF THE SOUTHWEST** by Oscar T. Branson. People all over the world have made and used fetishes since the beginning of time. Author Branson, using the same beautiful, all-color format as his *TURQUOISE, THE GEM OF THE CENTURY*, describes and illustrates the fetishes used by the Indian tribes of the Southwest. Large format, 64 pages, \$7.95.

## Desert Magazine Book Shop

### Order Form

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

I enclose \$ \_\_\_\_\_ (check, money order or charge)

MY CHARGE: ☐



☐



Credit Card No. \_\_\_\_\_

Expiration Date \_\_\_\_\_

Month/Year \_\_\_\_\_

MasterCharge \_\_\_\_\_

Interbank No. \_\_\_\_\_

Signature \_\_\_\_\_

(charge not valid unless signed)


California residents add 6% sales tax \_\_\_\_\_

Postage/handling \_\_\_\_\_

TOTAL \_\_\_\_\_

### Ordering Information

Use the convenient order form. Print all information clearly.

On orders exceeding \$20.00 United Parcel Service is used requiring a delivery address and NOT a box number.

All orders shipped in padded containers or cartons. Add

\$1.50 postage per order, NOT each item.

Normally, we ship within 48 hours of receiving your order. In the event of a delay exceeding two weeks, you will be notified as to its cause.

California residents please add 6% sales tax. Prices are subject to change and supplies limited to available stock.

Mail today to:

**Desert Magazine Book Shop** P.O. Box 1318, Palm Desert, California 92261



# You can now order article reprints from this publication

University Microfilms International, in cooperation with publishers of this journal, offers a highly convenient Article Reprint Service. Single articles or complete issues can now be obtained in their original size (up to 8 1/2 x 11 inches). For more information please complete and mail the coupon below.

## ARTICLE REPRINT SERVICE

University Microfilms  
International

☐ YES! I would like to know more about the Article Reprint Service. Please send me full details on how I can order.

☐ Please include catalogue of available titles.

Name \_\_\_\_\_ Title \_\_\_\_\_

Institution/Company \_\_\_\_\_

Department \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Mail to: University Microfilms  
International

Dept. DR  
Article Reprint Service  
300 North Zeeb Road  
Ann Arbor, Michigan 48106



# THE TRADING POST

## HOW TO PLACE YOUR TRADING POST AD.

Mail your copy and first-insertion remittance to: Trading Post, Desert Magazine, P.O. Box 1318, Palm Desert, Calif. 92261. Classified rates are 75¢ per word, \$7.50 minimum per insertion.

Deadline for Classified Ads is 10th of second month preceding cover date.

Ads requesting response to a P.O. Box number will not be considered for publication unless accompanied by the full street address and phone number of the advertiser. This information, for the publisher's records only, is required by law.

## BOOKS AND MAGAZINES

POETRY PUBLISHER seeks all types of poems, including religious works, for book. New writers welcome. Send poems for free opinion. Discovery Publishing (GX), 44 Monterey Boulevard, San Francisco, CA. 94131

The haunting beauty of the Big Bend Country. The incredible ruggedness of the Guadalupe Mountains. Caves painted by unknown Indians 10,000 years ago. Hidden springs where lions wait for bighorn sheep. The secrets of the Great Chihuahuan Desert, the place the Mexicans call The Land of No People. Walk this beautiful, awesome land with Vanishing Texas Magazine. \$5.00 for six issues, \$8.00 for twelve. Box 1, Bee House, TX 76512

"Strike It Rich — Gold Fever" The perfect book revealing techniques and secrets to finding gold. \$2.95. C. C. Publications, P.O. Box 1176, Indio, CA 92202

## BUSINESS OPPORTUNITIES

You can WRITE, PUBLISH, DISTRIBUTE and keep the profits on your how-to-do-it books as I am doing now. Details \$3.00. CBC, P.O. Box 2591, Chula Vista, CA 92012

STAND UP TO INFLATION AND TAXES! Earn handsome profits (Two to three times your cost) on home wholesale business. Send \$2.00 (Refundable) for details and color catalog of over 2000 quality products including hunting, knives, lanterns, lamps, toys, tools, dolls, hundreds more. T. Charles Brown Co. Dept. DE-1, 812 Miller Ave., Cupertino, CA 95014

## EQUIPMENT

PRECISION LAPIDARY Abrasive Compounds for tumbling, polishing and grinding. Send for free catalog and price list. MDC Industries, 400 West Glenwood Ave., Philadelphia, PA 19140. Dealer Inquiries invited.

AUTOMATIC GOLDPANNER. Pan for gold the easy way. From \$395.00. Goldhound, 4078 Lincoln Blvd., Marina Del Rey, CA 90291 (213) 822-2252

## FOODS AND RECIPES

SOURDOUGH FOR THE SOUL. Make yours. Recipes too. Only \$2.00 to P.B. Inc., Box G, Cima, CA 92323

"CULTURAL COOKING of the Southwest" Send \$2.00 and self addressed envelope to: "Menu" Paul Lerma, P.O. Box 76, Somerton, AZ 85350

DELICIOUS MAPLE ICE! Country recipes, attractive booklet. Only \$1.00! Moonridge Mountain Enterprises, Box M4-14H, Big Bear Lake, CA 92315

## GEMS

SHAMROCK ROCK SHOP, 593 West La Cadena Dr., Riv-

erside, CA 92501 (714) 686-3956. Parallel to Riverside Freeway. Come in and browse; jewelry mountings, chains, supplies, minerals, slabs, rough material, equipment, black lights, metal detectors, maps, rock and bottle books.

## IRRIGATION EQUIPMENT

WATER STORAGE & Delivery Systems Catalog \$1.00 (refundable) includes: Collapsible Nylon water storage tanks, FDA approved lightweight Polyethylene water tanks to 6000 gallons, hand and battery powered water pumps, drip & mist irrigation supplies, battery operated water timers. Domestic Growers Supply, Box 809 DS, Cave Junction, OR 97523

## MAPS

OLD STATE, Railroad, County Maps. 70-110 years old. All States. Stamp for catalog. Northern Map, Dept. DM, Dunnellon, FL 32630

GOLD AND SILVER LOCATIONS ON BIG 2-COLOR MAP. Mountains, rivers, creeks where gold and silver have been found in the western United States. Two colors. Big 17X22 size. Includes interesting historical facts. Send \$7.50 to Henry J. Morton Company, Dept. D., 6415 S.W. Canyon Cr., Portland, OR 97225

## MISCELLANEOUS

INCORPORATE in tax-free Nevada! Details Free. CANI-DM, Box 2064, Carson City, NV 89701

FREE LITERATURE AND SAMPLE of Aloe Vera Product, Suntan Lotion, Cosmetics, First Aid Burn Gel, Face-Lift Kit. Write: Aloe, P.O. Box 8418, Corpus Christi, TX 78412

## HOBBY PRINTING (adults repro.)

Complete press, type and cabinets. Unusual find. (213) 256-8884

## PROSPECTING

DRYWASHERS! GOLD CONCENTRATORS! Guaranteed to recover minerals, gold. A hobby that pays for itself! Write to Nick's Nugget, P.O. Box 1081, Fontana, CA 92335 (714) 822-2846.

PROSPECTING SUPPLIES. Books and information on Twentynine Palms gold area available at Mac Mahon's Rock Studio, 6451 Adobe Rd., 29 Palms, CA 92277. Visit our gift shop. Doolie Dowsing Rod — \$8.00.

## REAL ESTATE

"FORECLOSURES" How to locate and Buy. Guaranteed. All types. FREE DETAILS. Write: Real Estate Secrets, Box 249, Phoenix, AZ 85001

Need 1-2 couples as permanent residents. Lovely desert land, equidistant between St. George, UT, Mesquite, NV. We provide trailer site, water, sewer. Phone, propane available. No electricity; generator needed. We ask permanent residency; 3-5 yrs. minimum. Our purpose: to have resident on land. Information write: Smith, Box 667, Layton, UT 84041.

## SEEDS AND PLANTS

JOJOBA 25 clean seeds, instructions, \$2.00 prepaid. Indian Trail Nursery, Star Rt. 2, Box 75, Twentynine Palms, CA 92277

## TREASURE FINDERS

INSTANT RICHES! Explore ghost towns. Find buried treasure, coins, relics, antiques and more. Goldak the finest "Metal and Treasure Locators since 1933." Send for free catalog. Goldak, Dept. D, 626 Sonora Av, Glendale, CA 91201.

TREASURE — Locate quarter mile away with ultrasensitive locator, brochure free. Research Products, Box 13441-BUC, Tampa, FL 33611

## WESTERN ART

KINGSLEY OSMUND HARRIS, Artist. See his beautiful original realistic western paintings displayed in Desert Magazine's Western Art Gallery, 74-425 Hwy 111, Palm Desert, CA 92261





## IDYLLWILD, CALIFORNIA VIEW-FILLED RESIDENCE IN ALPEN WOODS ESTATES

Unique design and luxurious appointments mark this highly original 10-sided redwood-decked house set on an acre of the San Jacinto Mountains' western slope. Rustic sophistication characterizes the enormous entertainment complex with its dramatic vista toward Tahquitz Rock seen through a bay of two-story windows. Soaring ceilings, rough wood columns, pine-scented dining deck, and cozy balcony-loft are features of this seven-room residence, one of 30 homes in the forest residential community of Alpen Woods Estates. Brochure D-71405.

\$395,000

**Previews inc.**  
"The First Name in Fine Real Estate"

5670 Wilshire Boulevard  
Los Angeles, California 90036  
Phone: (213) 937-0703



# Jeep Wagoneer *Limited*



## The ultimate wagon



Luxury and comfort combined with exceptional 4-wheel drive performance. You'll find them all in the 1980 Jeep Wagoneer Limited. With all these most wanted options, standard!

Rich leather seats, extra-thick carpeting, woodgrain trim—you're surrounded in comfort. And brand new for 1980, conveniences like power windows, power door locks, and a quartz digital clock. Plus a

stereo AM/FM radio with your choice of 8 track or CB.

Superior performance is the Jeep trademark! Features like automatic transmission, power steering and power front disc brakes

plus Quadra-Trac®, Jeep's exclusive, automatic 4-wheel drive system all work together to provide unsurpassed traction and superb towing capabilities. On-road or off—in good weather or bad.

We invite you to test drive the 1980 Jeep Wagoneer Limited. You'll quickly understand why it is the ultimate wagon and the ultimate in 4-wheel drive.

Jeep Corporation, a subsidiary of American Motors Corp.



We wrote the book on 4-wheel drive